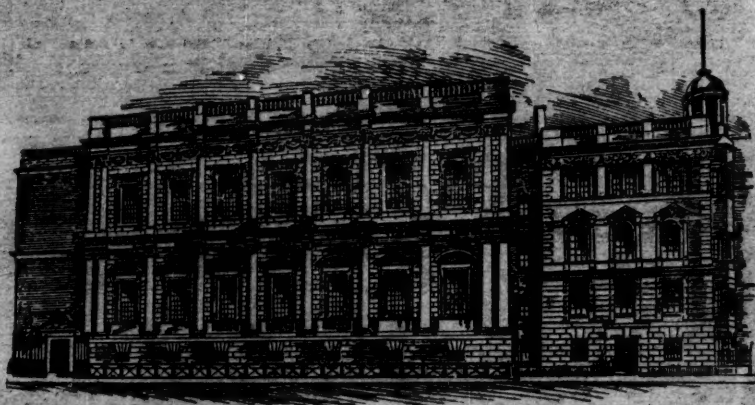


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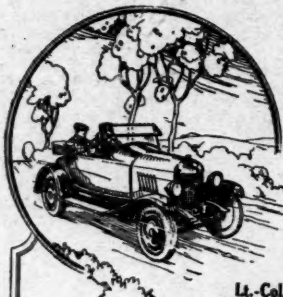
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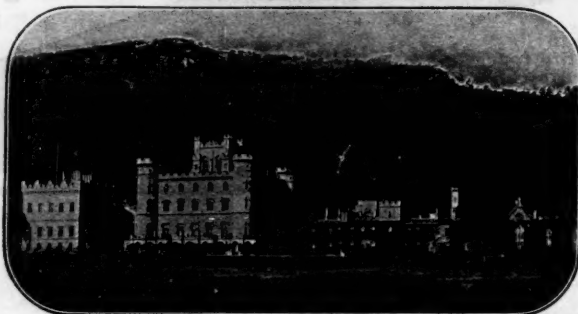
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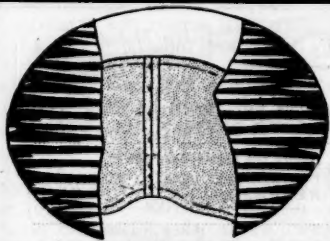
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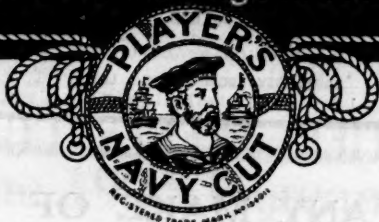
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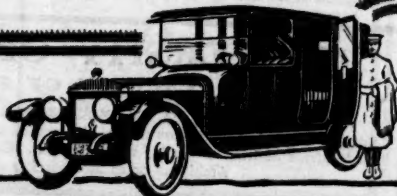
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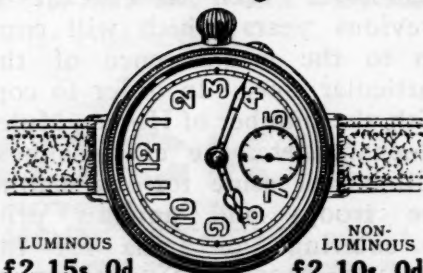


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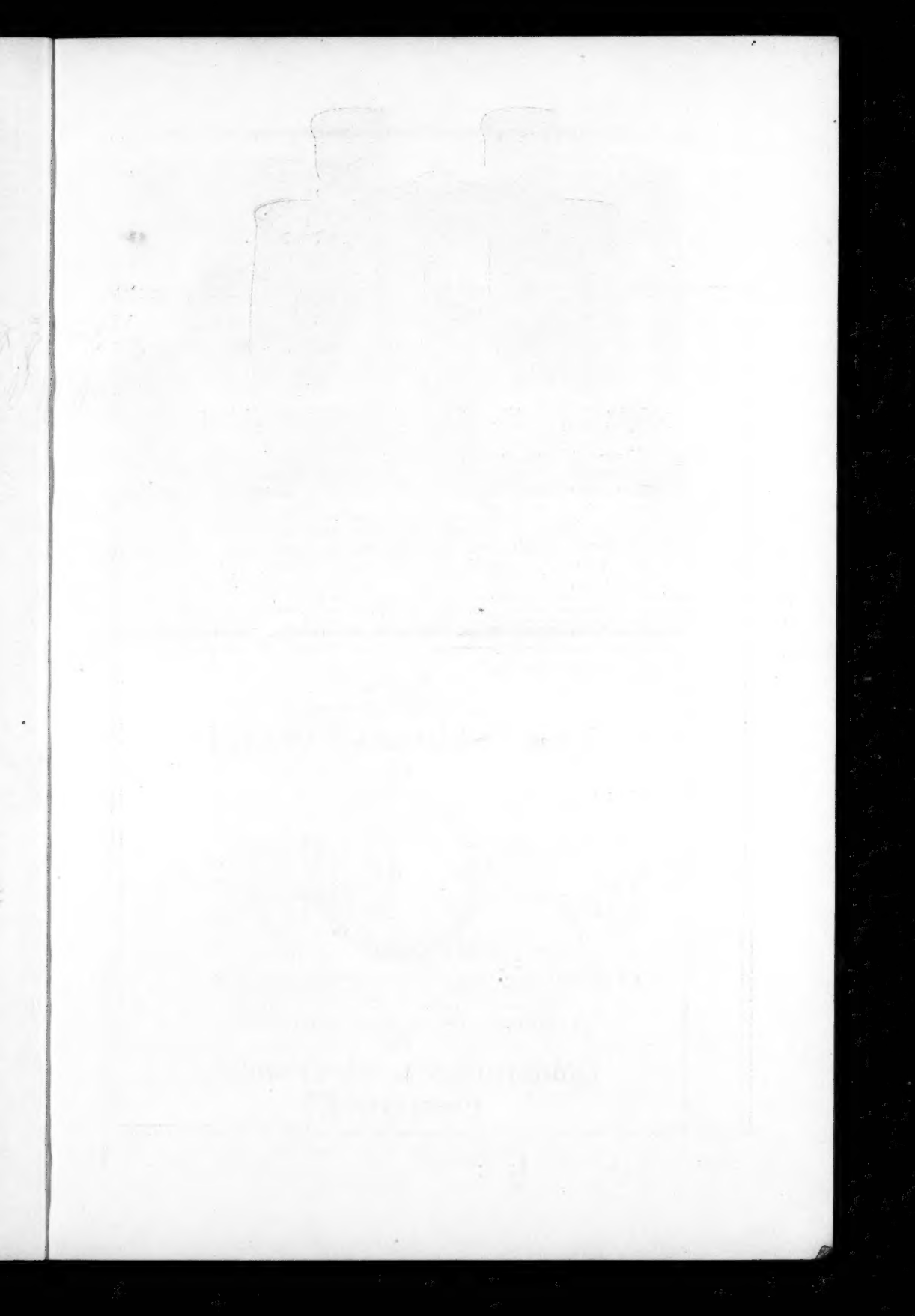
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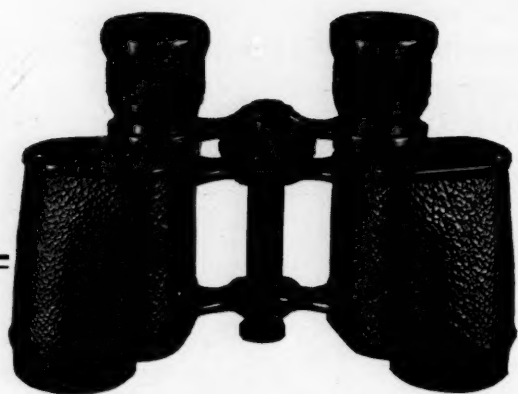
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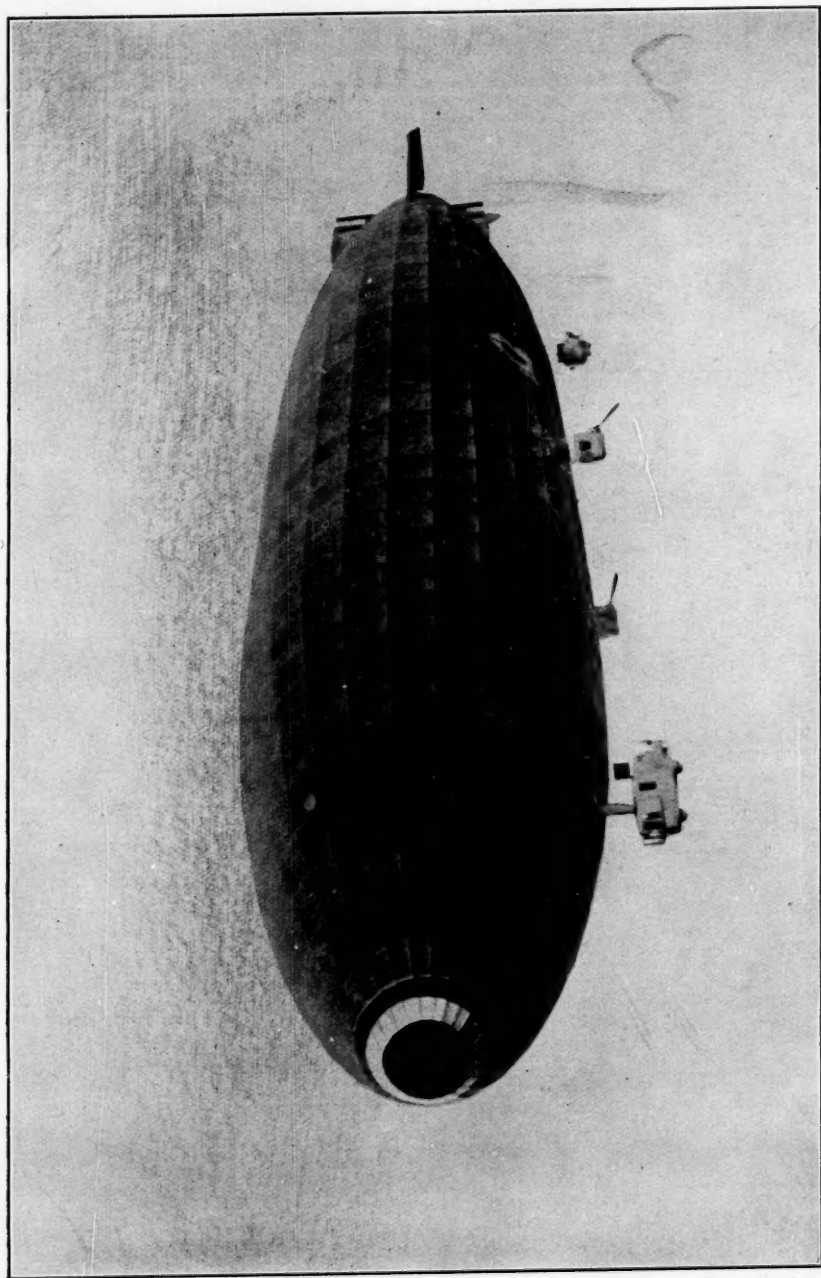
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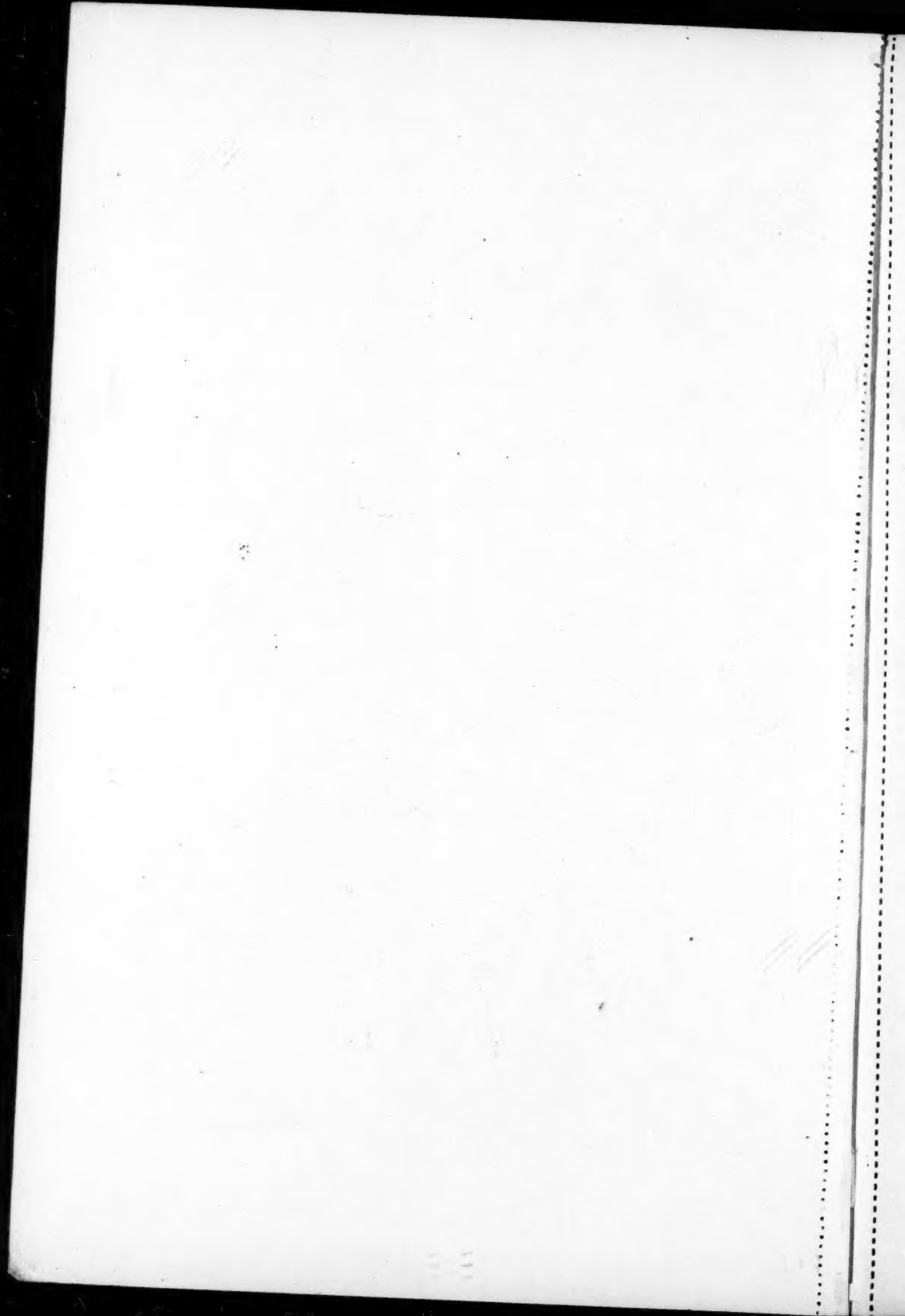
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SECRETARY'S NOTES.

FEBRUARY, 1925.

I. Council.

The following Members of the Council, having completed three years' service, retire at the Anniversary Meeting:—Admiral-of-the-Fleet Earl Beatty, G.C.B., O.M., G.C.V.O., D.S.O.; Field-Marshal Sir W. R. Robertson, Bart., G.C.B., G.C.M.G., K.C.V.O., D.S.O.; Admiral Sir R. G. O. Tupper, G.B.E., K.C.B., C.V.O.; General Sir E. G. Barrow, G.C.B., G.C.S.I.; General Lord Horne, G.C.B., K.C.M.G., and Lieut.-General Sir H. S. G. Miles, G.C.B., G.C.M.G., G.B.E., C.V.O., all of whom offer themselves for re-election.

The following vacancies on the Council will be filled at that meeting, in accordance with Chap. V. of the Byelaws:—Royal Navy, two; Regular Army, four.

II. Anniversary Meeting.

The Anniversary Meeting will be held on Tuesday, March 3rd, 1925, at 3.30 p.m. The Council will present their Annual Report and Accounts for 1924, the election to vacancies on the Council takes place, the result of the Gold Medal Essays announced, and other business. The chair will be taken by the Chairman of the Council, Admiral Sir R. G. O. Tupper, G.B.E., K.C.B., C.V.O.

III. Membership.

The Council beg to report that during the past year 401 Officers joined the Institution (against 487 in 1923). There were 157 withdrawals and 103 deaths (of which 43 were Life Members), making an increase of 141 on the year.

The Council trust that Members will do their utmost to introduce new members during the coming year.

The details of Members joining were as follows:—

Regular Army (all arms)	280
Royal Navy	39
Royal Air Force	35
Territorial Army (including Yeomanry)	22
Royal Naval Reserve	8
Royal Marines	8
Overseas Forces	4
Militia	3
Civil Functionaries	2
Total	401

The total number of Members on January 1st, 1925, was 5,812.

IV. Officers Joined.

The following Officers joined the Institution during the months of November, December and January, viz. :—

Lieutenant D. N. Gordon, R.A.
 Captain D. E. M. Woodhouse, M.C., The Cameronians.
 Lieut.-Colonel O. L. Mathias, O.B.E., late Welch Regiment.
 Lieutenant C. C. Duchesne, M.C., R.E.
 Lieut.-Colonel C. A. Howard, D.S.O., K.R.R.C.
 Captain G. D. Taylor, I.A.
 Lieutenant W. C. B. Tunstall, O.T.C.
 Captain C. E. L. Watkins, M.C., King's Own Yorkshire Light Infantry.
 Captain F. H. G. Tudor-Owen, late Rifle Brigade.
 Lieutenant A. D. M. Lewis, Royal Welch Fusiliers.
 Squadron-Leader P. C. Maltby, D.S.O., A.F.C., R.A.F.
 Captain J. D. Edge, M.C., R.A.
 Second-Lieutenant E. C. Saw, King's Own Yorkshire Light Infantry.
 Lieutenant W. N. Craig-McFeely, R.A.S.C.
 Lieutenant T. G. Rennie, Black Watch.
 Major M. A. Studd, D.S.O., M.C., Royal Tank Corps.
 Major J. E. N. Ryan, M.D., T.D., R.A.M.C. (T.A.).
 Captain A. E. Maitland, D.S.O., M.C., Essex Regiment.
 Colonel Commandant T. C. Mudie, D.S.O., Royal Tank Corps.
 Captain R. E. Besant, late Seaforth Highlanders.
 Lieutenant P. G. S. Gregson-Ellis, Grenadier Guards.
 Captain E. J. Medley, M.C., R.A.
 Lieutenant C. R. L. Scott, Royal Marines.
 Captain J. A. C. Whitaker, Coldstream Guards.
 Captain H. R. Dobb, O.B.E., R.A.S.C.
 Lieutenant F. L. Houghton, R.C.N.
 Captain R. K. Hubbard, O.B.E., R.A.S.C.
 Captain J. L. Oliver, Somersetshire Light Infantry.
 Colonel C. H. Gay, D.S.O., R.A.
 Lieutenant J. H. N. George, Somersetshire Light Infantry.
 Captain R. G. Mountain, M.C., I.A.
 Lieutenant J. J. E. Barclay, R.N.R.
 Captain C. B. Falls, late General Staff.
 Lieutenant T. L. Firbank, R.A.
 Colonel W. MacK. Smith, D.S.O., T.D., T.A.
 Colonel C. C. Leveson-Gower, C.M.G., O.B.E., late I.A.
 Captain E. D. B. Oxley, M.C., North Staffordshire Regiment.
 Captain R. A. Chell, M.C., late 10th (S) Bn. Essex Regiment.
 Captain W. Barton, M.C., Dorsetshire Regiment.
 Lieutenant B. O. Ware, Loyal Regiment.
 Lieutenant H. S. Anderson, R.E.
 Captain F. A. Esse, I.A.
 Flight-Lieutenant R. M. C. Macfarlane, M.C., R.A.F.
 Captain R. A. D. Moseley, Royal Scots Fusiliers.
 Captain C. F. Scroope, I.A.
 Captain J. C. Gain, M.C., I.A.
 Captain R. F. C. Oxley-Boyle, M.C., Queen's Royal Regiment.
 Lieutenant J. R. Waters, R.A.

Lieutenant A. F. S. Douglass, M.C., King's Own Yorkshire Light Infantry.
 Major E. G. Langford, D.S.O., R.A.
 Captain J. MacD. Latham, M.C., Highland Light Infantry.
 Major-General Sir E. Northey, G.C.M., G.C.B., late King's Royal Rifle Corps.
 Lieut.-Commander W. B. Galpin, R.N.
 Captain M. Wallington, M.C., Royal Sussex Regiment.
 Lieutenant R. M. A. Welchman, R.E.
 Captain G. R. B. Blount, D.S.O., R.N.
 Squadron-Leader C. H. B. Blount, O.B.E., M.C., R.A.F.
 Captain W. A. Putnam, I.A.
 Major J. G. Milne, late Imperial Light Horse.
 Lieutenant C. B. Johnson, late 12th (S.) Bn. Manchester Regiment.
 Captain L. F. Mitchell, M.C., 5/6th Dragoons.
 Lieutenant J. B. Hyde-Smith, R.H.A.
 Captain R. MacG. M. Lockhart, I.A.
 Flight-Lieutenant T. F. W. Thompson, R.A.F.
 Captain R. A. Boxshall, East Surrey Regiment.
 Lieutenant E. M. Ransford, Suffolk Regiment.
 Captain E. R. Greer, I.A.
 Lieut.-Commander L. H. K. Hamilton, D.S.O., R.N.
 Lieutenant P. A. Brooke, M.C.R.A.
 Lieutenant J. M. Haycraft, Queen's Own Royal West Kent Regiment.
 Lieutenant F. G. W. Radcliffe, M.C., R.H.A.
 Major J. Wortley, late 4th Bn. York and Lancaster (T.A.).
 Colonel Sir S. D'A. Crookshank, K.C.M.G., C.B., C.I.E., D.S.O., M.V.O., late [R.E.]

Captain E. D. Shafto, King's Royal Rifle Corps.
 Captain H. A. Heber-Percy, 15/19th Hussars.
 Captain N. M. Ritchie, D.S.O., M.C., The Black Watch.
 Captain O. G. Williams, Duke of Wellington's Regiment.
 Captain N. C. D. Brownjohn, M.C., R.E.
 Lieutenant J. E. Stirling, Seaforth Highlanders.
 Captain L. A. Foster, M.C., I.A.
 Lieutenant R. H. LeM. Lawrence, I.A.
 Lieut.-Commander A. R. Farquhar, D.S.C., R.N.
 Lieut.-Colonel A. G. B. Smith, D.S.O., late Royal Scots Fusiliers.
 Lieut.-Commander J. G. Y. Loveband, R.N.
 Sub-Lieutenant J. P. L. Reid, R.N.
 Captain J. C. F. Holland, D.F.C., R.E.
 Pilot Officer A. H. Montgomery, R.A.F.
 Captain J. A. Bevan, King's Own Royal Regiment.
 Captain B. S. V. Emsell, 9th Lancers.
 Lieutenant O. P. Joce, Devonshire Regiment.
 Captain M. R. Keene, I.A.
 Captain W. R. Moll, I.A.
 Captain K. F. W. Dunn, R.H.A.
 Captain H. J. R. Brierly, M.C., Coldstream Guards.
 Captain P. C. Marindin, M.C., West Yorkshire Regiment.
 Captain G. T. C. P. Swabey, D.S.O., R.N.

In the Secretary's Notes of the November (1924) *Journal*, Lieut.-Colonel R. W. Hanbridge should read Lieut.-Colonel R. W. Hanbidge.

V. Lectures.

Vice-Admiral Sir Percy Grant writes with reference to his lecture on Dominion Navies which is printed in the *May Journal* :—

"It must be understood that Ulster is providing a drill ship for R.N.V.R.s *in addition* to taking her share of the national burden for the upkeep of the British Navy in the same manner (viz., by contribution towards Imperial taxation) as any other part of the United Kingdom."

Admiral Grant regrets that this was not made clear in his lecture.

VI. Gold Medal Essay (Military), 1924.

The following additional essays were received :—

8. "Aut iram inveniam aut faciem."
9. "Save the Seed-Corn."
10. "Tua res agitur."
11. "A wise man is strong, and a knowing man stout and valiant. Because war is managed by due ordering."
12. "Mulebbis."
13. "Sic itur ad astra."
14. "L'union fait la force."
15. "Festina lente."

VII. Gold Medal Essay (Naval), 1925.

The Council have selected the following as the subject :—

"The Communications across the Oceans of the World being essential to the Empire, how best can they be safeguarded?"

VIII. The Museum.

The amount taken for admission to the Museum during the past quarter was :—

- £78 13s. 6d. in November.
£66 11s. 6d. in December.
£73 9s. 3d. in January.

ADDITIONS.

(3567) Six Commissions executed by the Commissioners of the Office of Lord High Admiral of Great Britain and Islands of all His Majesty's Plantations which were bestowed on Vice-Admiral Viscount Nelson, K.B., viz. :—

1. Captain, H.M.S. "Agamemnon" (1793).
2. Colonel, Royal Marines (1795).
3. Rear-Admiral of the Blue Squadron (1797).
4. Rear-Admiral of the Red Squadron (1799).
5. Vice-Admiral of the Blue Squadron (1803).
6. Vice-Admiral of the White Squadron (1804).—Deposited by "Save the 'Victory' Fund."

(3568) A Crayon Drawing in frame, by Robert Morley, of H.M.S. "Victory" in Portsmouth Dockyard, executed in June, 1923.—Deposited by "Save the 'Victory' Fund."

(3569) A Spanish Flag taken at Montevideo on February 3rd, 1807, by General Whitelock's force. Sir Samuel Auchmuty commanded the brigade which led the assault, and captured the citadel on which the flag was flying and it went into his possession. The 87th Regiment formed part of the brigade, and it was presented in 1907 by his descendants to the 1st Battalion Royal Irish Fusiliers.—Deposited by The Officer Commanding and Officers of the Royal Irish Fusiliers.

(7840) A small Camp-kettle resting on a copper lantern with lamp inside it, used during the Waterloo campaign. The donor has known it for upwards of 80 years, it having become the property of her father on the death of the Officer to whom it belonged.—Given by Mrs. E. Searby.

(7841) Pair of Regimental Colours of the Bloomsbury and Inns of Court Association, dated 1799.—Given by The Officer Commanding and the Officers of The Queen Victoria's Rifles (9th London Regiment).

(7842) Pair of Regimental Colours of St. George's Rifles (King George III. period).—Given by The Officer Commanding and the Officers of The Queen Victoria's Rifles (9th London Regiment).

(7843) Pair of Colours of the Victoria Rifle Club, dated 1835.—Given by The Officer Commanding and the Officers of The Queen Victoria's Rifles (9th London Regiment).

This Battalion was originally formed in May, 1798, as the Covent Garden Volunteers; in 1803 it became the Duke of Cumberland's Sharpshooters, and was the first London Corps to be clothed as Riflemen; at the end of the Napoleonic Wars it was permitted to remain in a non-official status as a rifle club, in 1835 it became known as the Royal Victoria Rifle Club, and in 1853 it became the Victoria Rifles.

(7844) Bronze Medal granted by the Upper Silesian *Plebiscite* to the Allied Troops employed during 1920-1922 on their behalf. The Medal was not accepted for the British Forces.—Given by Lieut.-Colonel H. F. W. Jourdain, C.M.G.

(7845) Officer's Coattee, white nakin Vest and Stockinette Pantaloon of about 1810, of the Royal Engineers.

(7846) Officer's Coattee, with epaulettes, of the Royal Engineers, *circa* 1820.

(7847-8) Two white nakin embroidered Waistcoats of the Royal Engineers, *circa* 1820.

(7849) Pair of white Stockinette Pantaloon embroidered with Austrian knots on the pants of the Royal Engineers, *circa* 1820.

(7850) Cocked Hat of the Royal Engineers, 1795.

(7851) Cocked Hat of the Royal Engineers, 1820.

(7852) A small Sword Belt and gold Dress Knot of the Royal Engineers, 1820.
All the above Uniform belonged to Lieut.-Colonel G. Landmann, R.E. (1795-1824).

- (7853) Officer's Coattee, 19th Foot, worn by Ensign G. I. W. Landmann (1828-1832).

The whole of the foregoing were given by Rear-Admiral E. C. G. Jervoise, C.B.E.

- (7854) A double-barrelled (over and under) Pocket Pistol with flint lock by D. Egg of London, King George III. period.—Given by J. S. Evans, Esq.

IX. The Chesney Memorial Medal Awards.

The Council have awarded this medal for 1924 to Professor Geoffrey Callender, M.A., F.S.A., professor of Naval History, Royal Naval College, on account of his recent book "The Naval Side of British History," and in recognition of his services to Naval History generally.

They have also awarded this medal for 1925 to Captain Sir George Arthur, Baronet, M.V.O., on account of his biography of Field-Marshal Earl Kitchener; also for his connection with the recent biography of Field-Marshal Viscount Wolseley, his history of the Household Cavalry and contributions to Military Literature generally.

X. Lectures:

The Council regret to report that, owing to ill-health, the Lecture to be given on February 25th by Major-General H. F. Thuillier, C.B., C.M.G., on "Engineers and the Army," is unavoidably postponed.

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OF THE
Royal United Service Institution.

VOL. LXX.

FEBRUARY, 1925.

No. 477.

[Authors alone are responsible for the contents of their respective Papers. All communications (except those for perusal by the Editor only) should be addressed to the Secretary, Royal United Service Institution.]

THE "ÉCOLE SUPÉRIEURE DE GUERRE," PARIS.

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THE French Staff College, or *École Supérieure de Guerre*, has long been established in the *École Militaire* on the Champs de Mars, Paris, facing the Eiffel Tower and the Trocadero. The original building was designed by Gabriel for Louis XV. in 1751, at the instigation of that ardent builder, Madame de Pompadour. It is a good specimen of the later classical style of French architecture of which Paris has so many fine examples. In these premises are housed the Commandant and Second in Command of the College and a few Senior Staff Officers. They contain the administrative offices, the lecture halls and the library for the College and also the room allotted to the *Centre des Hautes Études*—a war college where six-months' courses are held for senior Colonels and Brigade Commanders. In the adjoining barracks are a regiment of cavalry, some artillery and stables for the 200 horses which belong to the *École de Guerre*.

The halls of study consist of two large lecture rooms, each with seating accommodation for some 120 officers, fitted with cinema and lantern apparatus, and a number of small rooms, accommodating some ten to twenty officers each, provided with plain wooden desks and hard stools. Everything is designed on a strictly utilitarian basis and in accordance with the sound French policy of getting the last ounce of value out of the money voted by the Chamber for its Army.

The College is designed for purposes very similar to those of the Staff College, Camberley—namely, for the training of officers of ages somewhere

about 25 to 35 in the higher branches of the art of war and in the duties of the staff. The entrance examination is competitive and consists of two portions, arranged, so far as possible, to eliminate the crammer's trained competitor. In the written portion candidates are set a limited number of papers, some four or five, one of the most important of which is the preparation of a considered essay on some subject for which the relevant documents are provided. For instance, in one case a mass of diplomatic and other papers dealing with relations between France and Germany between 1870 and 1914 was given to the candidates, who were told to write a paper showing how the relations between the two countries had led up to the Great War. The time allowed for this work was seven hours, during which candidates worked without a break of any kind. This written examination is used to reduce the number of candidates to about 130 per cent. of the vacancies available, and the final selection is done by a series of boards of officers, who carry out very rigorous oral examinations on military subjects and in languages. Nothing is laid down as to the proportion of various arms who shall enter the College in each batch or *promotion*, but apparently during the oral examination some rough discrimination as to arms is made.

The list of successful candidates is published in March, and the future students spend the following six months, prior to joining the College in November, in attachments to all arms of the services, excluding their own. Thus, an infantryman is attached to cavalry, artillery and air units, and so on. By this preliminary attachment every officer is placed closely in touch with the latest developments in tactics, armament and administration of each arm of the service and is in a better position to make good use of the teaching which he will receive during his two years at the *École de Guerre*.

The staff is organised into two distinct parts, the *direction des études* and the instructional staff. The Commandant is a *Général de Division* or *Général de Brigade*. General Debeney has just vacated this appointment to become Chief of the Staff of the Army. His successor is the former Second in Command, General Dufieux, at one time Chief of the Operations Section at G.Q.C. General Debeney was a member of the *Conseil Supérieure de la Guerre*, and as this entailed many duties besides those directly connected with the *École de Guerre*, most of the organising and disciplinary work fell on the Second in Command. The latter has as assistants a Colonel and a Lieutenant-Colonel, whose primary functions are the supervision of the instruction, and two Majors (*Commandants*), one corresponding to a Brigade Major, the other for administrative work, corresponding to a Staff Captain. There are other junior officers working under these two latter. The teaching staff is divided into ten courses (*cours*), viz., staff duties and tactics of all arms (*état-major et tactique générale*), infantry, cavalry, artillery, fortification, aeronautics, military history, equitation, and various languages, of which the principal are English and German. The *cours* are each in charge of a *professeur*, usually a full Colonel, who is assisted by several assistant professors

(*professeurs-adjoints*), who are Lieutenant-Colonels and Majors. Each *cours* runs its own lectures, schemes, etc., the co-ordination of the teaching of the various arms being part of the functions of the *Direction des Études*. The total staff in 1923 consisted of 15 officers on the direction and/or administration duties, and 52 instructors.

The *cours d'anglais* is under Lieutenant-Colonel Gêmeau, a well-known figure at G.H.Q. during the war, as he was attached to the British Commander-in-Chief's staff for several years. There are three French *professeurs-adjoints*, one of whom has also done *liaison* work with the British Army during the war, and one British officer.

Student officers are divided into groups according to their knowledge of the language; work with the senior groups is most interesting and varied, and, as all have a fair and many a good command of English, most interesting discussions can be held.

The students (*élèves*), of whom 60 to 100 are admitted annually, are for all studies, except reading and languages, permanently organised into groups, each of about ten French and three or four foreign officers. Some 30 to 40 foreign officers are admitted each year, and these form a distinctive feature of the *École de Guerre*, and are drawn from most of the allied and neutral nations by nomination by their respective countries and without examination. The following nationalities were represented during 1922-23: U.S.A., Belgium, Japan, Portugal, Rumania, Czechoslovakia, Yugo-Slavia, Poland, Chili, Denmark, Finland, Holland, Spain, Sweden, Switzerland, Siam. Of these, U.S.A., Poland, Czechoslovakia and Yugo-Slavia had from three to six in each *promotion*, whilst the other nations were represented by one or two only. The Siamese officer was a prince of the Royal House who had been educated at Eton and at the Royal Military Academy, Woolwich, and who up to the outbreak of war was attached to the Royal Horse Artillery at Aldershot. Many of the Czechoslovakian officers had commanded brigades and divisions in the Legion in Siberia, while the Poles had previously served either in the Russian, Austrian or German armies. In view of this heterogeneous combination of each group, it may be readily imagined how the discussion of a tactical question brings to light many varied experiences and many diverse mentalities.

The method of instruction differs to a certain extent from that of the Staff College at Camberley. Every officer has to ride three or four times a week, and this takes place at 7 or 8 a.m. On three days a week the second and third hours from 8 to 10 are devoted to languages, English and German being taken by most officers, though certain other languages can be taken, such as Polish or Russian, etc., in lieu of English. At 10.15 there is a lecture to the whole of a *promotion* in one of the large lecture halls. This lasts until 11.15 or a little after, at which time all officers are more than ready to go home to *déjeuner*.

Owing to the College being situated in the middle of Paris, it is difficult to spread the outdoor schemes over the whole year, as is done at Camberley, and, with the exception of a few days in autumn and spring,

outdoor work is carried out during the summer in the form of staff tours (*voyages*) in the country.

On an average two afternoons a week are devoted to work of various natures at the school, starting at 2 p.m., finishing at 5 or 5.30 p.m. An *exercice sur la carte* consists of a tactical scheme worked out on the map by a group under an instructor, and is somewhat on the lines of a Camberley *allez-allez* scheme, but done entirely indoors. The scheme is issued some days previously, and all students are supposed to be fully acquainted with its details and to be prepared, on arrival at the hall of study, to answer any questions and give decisions in any *rôle* which may be allotted to them. These decisions, etc., are then criticised by the professor, and after some discussion on relevant points, the narrative of the operations is continued, and the instructor calls on the students for further decisions and orders, etc. Another form of afternoon work, called *travail en salle*, is the preparation of orders by each individual officer. Certain details only having been issued previously, the special idea and the work required are communicated to officers on their arrival and the task has to be completed in three hours. As French orders are generally long and the work that is set for three hours in the afternoon is generally that which would be undertaken in the field by several different officers in a longer time, the mental state of the students by 5 o'clock is invariably one of exasperation and disappointment. Owing to the pressure at which they have worked and the feeling that they have failed to do themselves justice, they consider that their instructors are very hard on them. This state of mind is fully realised by the instructors, whose aim in setting some five hours' work to be done in three hours appears to be not so much to attain the impossible as to train officers to think and work quickly and in a somewhat rattled state of mind.

In addition, a series of schemes to be worked out at home (*travaux à domicile*) are set during the winter months. As a rule these are issued on the Saturday morning and have to be handed in on the following Monday week, and may entail anything from 20 to 50 hours of hard work. Each of the principal *cours* sets one such scheme during the period from November to March, and these are superimposed on the other work already described.

Students join in November, have a few days' leave at Christmas, a few days at Easter, and work straight through until the middle of May on the programme outlined above, with the addition, during November, March and April, of a few outdoor schemes in the country round Paris. By the middle of May the officers are in a highly "crammed" state, and the beginning of the summer season of staff rides or *voyages* is most welcome. During the first year's course each officer does three such staff rides (*voyages d'armes*), run by the Infantry, Cavalry, Artillery and Military History *cours* respectively. In addition, he spends three weeks visiting the frontiers of France from Lake Geneva to the Belgian frontier.

For these tours two groups of officers (about 30 officers) work

together in charge of some four or five officers of all arms from the instructional staff. The party proceeds to the first billet by rail, where it is met by a detachment of grooms and orderlies with horses for all. Work starts at 6 a.m. each morning, by which time all officers, with a proportion of horse-holders, are mounted in the square of the village in which they are billeted. The day's work is on the lines of the traditional *allez-allez* scheme, successive situations being issued by the instructors as the work proceeds. At 12 noon the party returns to *déjeuner*, after which a few hours are devoted either to sleep by the lazy ones or to the preparation of orders, etc., by the unfortunate or the energetic. At 5 p.m. all meet for a conference on the morning's work; this generally breaks up at about 6 or 6.30 p.m. Dinner is at 7 p.m., and most of the officers go to bed very soon after in view of their early start next morning. These tactical courses last about a week, with one day's rest in the middle. As a rule, during a *voyage d'infanterie* two days are devoted to the defensive, one day to an approach march, two days to the preparation and carrying out of an attack, and the last day to *exploitation* or pursuit. Somewhat similar allotment of time obtains for the artillery and the cavalry schemes. Billets are changed every third night, as by French law free quarters may be demanded for not more than three consecutive nights. The horses which are borne on the establishment of the *École* spend the whole summer on tour, moving from village to village, and provide mounts for some 15 of these *voyages*.

In addition, there are military history tours of three days only, which are devoted to the study of one of the battles of the Great War. During 1922 and 1923 the battle of the Ourcq was studied in the greatest detail by the first-year and the battle of 18th-22nd July, 1918, by the second-year students, and very useful lessons derived therefrom. The transport of this tour is carried out by motor and charabanc.

During the second year the tour of the frontier is completed, and a visit is made to certain munition factories. The principal tour consists of a staff ride lasting fifteen days, during which a series of tactical situations are worked out in detail. The student officers hold all posts on the Commands and Staff, from that of Corps Commander downwards, and an immense amount of valuable work is done during this tour. All feel that on their work during this tour depends the order of the final reports and of other subsequent appointments; there is good reason for thinking that the students are right.

These tours end about the middle of August, after which all proceed on leave until the next November, when the seniors are posted to appointments on the Staff and the juniors return for their second year. Officers are free to proceed to their homes in the intervals between the tours, so the total amount of leave during the year is on a liberal scale.

Another valuable feature of the course is a series of lectures by distinguished publicists, professors and other students of foreign policy. These lectures are attended by all the students and by the officers of the *Centre des Hautes Études*. They deal with many questions of foreign

policy, both European and Asiatic, and the general tendency is to show France as the one bulwark of civilisation on the Continent of Europe. Criticisms of British policy are both frank and free, but as a rule are made in a very fair spirit. In one remarkable instance a lecturer was heard to compare the methods of British and French diplomats and soldiers at the conference table, ending with a conclusion strongly in favour of the British method.

The life of the students forms a striking contrast to that of British officers at Camberley, for there are no quarters in the school, nor is there any mess in our sense of the word. The majority of the officers are married and have to find accommodation as best they can in and around Paris, and this is no easy matter, as the demand for flats is very much greater than the supply.

Although there is a gymnasium and fencing hall, which is very well attended, there are none of those collective games that form such an important part of the life at our Staff College, and this deprives officers of many opportunities of knowing their fellow-students. Few, if any, of the students know, even by name, all the officers in their own *promotion*, while many who are of a quiet or retiring disposition meet the officers of their own group, together with those of the allied group with which they go on tour, and practically no one else at all. This is one of the great drawbacks to the French system, for the excellent spirit of *camaraderie* which is fostered at Camberley cannot be produced to anything like the same extent. These conditions are, perhaps, complicated by the presence of the large number of foreign officers. These are welcomed by the students and are treated in every way similarly to the French officers, being admitted to all lectures except a very small number dealing with mobilisation, yet their presence naturally acts as a restriction on perfectly free discussion, more especially on all personal matters.

The problem which faces the French staff is entirely different from that on which training in this country is now based. The French envisage a Continental war over a land frontier with large armies in contact almost from the beginning, and the bulk of the teaching is directed along these lines. During the first year the tactics and staff duties of a division and its component parts are thoroughly studied, and in practically all schemes this division is considered as one of many, with both its flanks protected by other troops—i.e., *encadré*. During the second year the army corps forms the basis of study, and in most cases this is also treated as being *encadré*. For any important attack it is always assumed that artillery and ammunition at least on the scale of 1918 is available, and a high proportion of air force is always allowed as being available.

The greatest importance is attached to questions of inter-communication and *liaison*, which are studied in the minutest detail in all schemes. Further, every officer has to write orders not only as a corps or divisional commander for the air force working under him, but also as an air officer commanding a formation or unit of the air force. The French do not allow that there is any mystery in the work of handling

of air forces which cannot be grasped by officers of other arms of the service.

The knowledge of detail which is amassed during the course by all officers is remarkable. During the final *voyage* the volume of facts as to tonnage of ammunition, carrying capacity of transport units, etc., which students, holding positions as artillery or administrative staff officers, produce without reference to books is amazing.

Possibly there is too great a standardisation in the methods of warfare contemplated, but there can be no doubt that the *École de Guerre* is arriving at that goal of Moltke's ambition for his Great General Staff—namely, that a problem set to any number of his officers would produce the same number of practically identical solutions.

AN OUTLINE OF THE RUMANIAN CAMPAIGN, 1916-1918.

By MAJOR-GENERAL W. M. ST. G. KIRKE, C.B., C.M.G., D.S.O., *p.s.c.*

PART II. (30TH OCTOBER TO 25TH NOVEMBER, 1916).

THE AUSTRO-GERMAN ATTEMPTS TO BREAK THROUGH INTO RUMANIA, INCLUDING THE FIRST AND SECOND BATTLES OF TARGUJIU.

The Rumanian plan. (Map 6.)

After the battle of Brasov the Rumanians abandoned any further idea of an offensive in Transylvania, except in conjunction with the Russians, and they fell back everywhere to the positions already prepared in peace time for the defence of the frontier. The *morale* of the troops had undoubtedly been seriously lowered by constant defeat and retreat, as well as by the obvious inferiority of the Rumanian Army in artillery, machine guns, and in the air. The effect of German heavy artillery had been particularly marked, as is shown by a statement made at this time by a high Rumanian officer:—"The Rumanians will hold their present positions until shelled out; the Rumanian Army is helpless against heavy artillery."

The *morale* of the civil population had suffered equally owing to continuous bad news received first from one front, then from another, and by reason of incessant aerial bombardment. In view of these conditions the fight for the frontier which her armies now put up is worthy of favourable comment.

But the Germans had their own difficulties, and, the country into which the Rumanians had retired being favourable to the defence, a small breathing space was granted to them. The Russians were asked for help, and General Alexieff's reply brought into the open a divergence of strategic views as between the Russians and the Rumanians which gravely affected the conduct of the campaign throughout. To the Rumanians the first and vital consideration was, naturally, the defence of Rumanian territory. In their view any strategy which did not place this object in the foreground must be wrong, and to secure it they were prepared to risk everything. The indefensible salient of Western Wallachia must be defended as long as possible: Bucharest must be covered at all costs, even though the presence of the enemy at Cernavoda involved the holding of a salient hardly less pronounced. No Government could have remained in power which did not take up this standpoint. The French Mission, whose duty it was to assist the Rumanian Army by advice and encouragement—at this time they

possessed no other means of assisting Rumania—strongly supported that view.

But to the Russians the picture appeared quite otherwise. Looking at their long line from the Baltic to the Black Sea as a whole, and the Rumanian Army as merely a unit in it, Rumania appeared as a salient which practically doubled the length of the Russian front. So long as they were acting offensively this was no great disadvantage, since it tended to separate and disperse the enemy forces. If, however, they were definitely thrown on to the defensive, it would be sound strategy to shorten the front to be defended as much as possible. A retirement to the line of the Sereth down to Galatz and thence along the Danube to the sea would reduce it by over 600 miles. In the matter of withdrawals the Russians were accustomed to think large. To them the abandonment of a few thousand square miles of their own country—still less of someone else's—meant nothing very much. What to the Rumanians seemed inconceivable perfidy had always proved one of the strongest cards in Russian strategy.

Even before the necessity had actually arisen, highly-placed Russians, who had preceded the arrival of Russian forces in Rumania, were foolish enough to discuss it openly, and the effect may well be imagined. Hence, doubtless, arose accusations that the Russians never had any intention of assisting in the defence of Rumania; that her overthrow, indeed, would be by no means unwelcome to them. It has even been stated that Baron Sturmer, the Russian Prime Minister, intended to make friends with Germany by a partition of Rumania's dead body. It would be a bold man who would venture to make a categorical statement on any subject connected with Russian diplomacy. Such may have been his intention, but it seems safe to assert that he could not have carried it out so long as the Czar was on the throne.

Alexieff's reply to the Rumanian request for help had more regard for Rumanian susceptibilities than to suggest a retirement to the Sereth, but was sufficiently unpalatable. He proposed that a line of defence should be taken up running from Dorna Vatra in the northern corner of Rumania *viâ* Czik Czerada-Brasov-Bucharest to Constanza. From the flanks of this line Russian offensives were to be directed into northern Transylvania and the Dobrudja respectively. This plan meant the voluntary abandonment of Western Wallachia, the richest part of Rumania, and, needless to say, was entirely unacceptable to the Rumanian Government. We who held the costly Ypres salient throughout the war for far less solid reasons may fully appreciate their sentiments. A less drastic suggestion put forward by the British C.I.G.S., that a retirement to the line of the Olt was advisable in view of the exposed and isolated positions of the Jiu and Cerna detachments, was equally unacceptable to M. Bratiano, though advocated also by General Presan. The Rumanians thus adhered to their plan of defending the whole of their long frontier, hoping that the promised Russian offensives would soon materialise to relieve pressure, whilst the Russians

proceeded with their preparations for offensives in northern Transylvania and the Dobrudja, hoping that the Rumanians would hold in the centre, yet feeling not very confident about it, nor very concerned if they failed. Obviously a supreme command was very badly needed.

The German plan.

Falkenhayn had hoped that he might be able to follow on the heels of the retreating Rumanians and force the passes leading to Bucharest. The timely retirement of the Second Army and the reinforcements which the Rumanians had brought, and were still bringing up, rendered this a far more difficult task than he had anticipated. Moreover, he was faced by much the same difficulties which the Rumanians had experienced in their initial advance, increasing with every mile which he penetrated into the mountains. Maintenance of the troops on the different roads was not easy, and railheads were still six marches away at Sibiu (Hermannstadt) and Sighisoara (Schassburg); it was, consequently, impossible to concentrate any large force on any one road without delay and surrendering the factor of surprise; deployment off the roads was difficult, and the heavy artillery, on which he particularly relied, was much handicapped in consequence.

He decided, in view of the difficulties mentioned above, to attack everywhere along the 150 miles of Transylvanian frontier from the Szurduk to the Buzau Pass inclusive, in the hopes of finding a weak spot and then of exploiting it with the fresh divisions now under orders for Transylvania. He relied on surprise and the loss of resisting power of the Rumanians rather than on weight in any one attack. If a break in the defences could be made, the shape of the frontier and the superiority of the Transylvanian railway system, specially designed for the invasion of Rumania, would give him a great advantage over the Rumanians, even though these latter might locally be operating on interior lines.

If Falkenhayn's plan involved dispersion as opposed to concentration, G.H.Q.'s ideas tended even farther in the same direction. Under Hindenburg's instructions, the First and Ninth armies were to attack in eccentric directions:—

- (a) towards Onesti, *i.e.*, to the N.E.;
- (b) a main attack towards Bucharest, *i.e.*, to the S.E.;
- (c) towards Curtea d'Arges, *i.e.*, to the S. and S.W.

Falkenhayn sarcastically remarks that this may have looked a very nice plan on a conference table at G.H.Q. in Pless, where they seemed obsessed by the idea of a Russo-Rumanian counter-attack in North Transylvania,¹ but it took no account of the exhausted condition of his troops, nor of his losses, which in many units had reduced effectives by 50 per cent. He might have added that, like his own plan, it underestimated the value of the enemy. However, he complied to a certain

¹ NOTE.—The German information concerning what was passing through the minds of the Russian High Command seems to have been remarkably accurate.

extent by sending Von Schmettow's Cavalry Corps (three brigades), followed by the 71st Division, towards the Oituz Pass, and then directed his remaining columns to push forward from the Brasov basin—

- (1) the 89th Division against the Buzau Pass;
- (2) the 51st Austrian and 187th Divisions against the Predeal (Tomos) and Predelus (Altschantz) Passes;
- (3) the 76th Division and 8th Austrian Mountain Brigade to exploit their success towards Campulung;
- (4) the Alpine Corps, with the 2nd and 10th Austrian Mountain Bdes., now arriving, to force a passage down the Olt valley.

We shall see what happened to the enterprise towards the Oituz Pass when dealing with the operations of the Fourth Rumanian Army. As regards the remainder, the advance on the Buzau and Predeal Passes could progress but slowly in the face of increasing resistance and corresponding losses, the country favouring the Rumanians, who, according to Falkenhayn, obtained excellent information from the inhabitants and were falling back on to more or less prepared positions. Nor was the advance towards Campulung much more fortunate in spite of an initial success at Rucar due to the arrival of the 8th Austrian Mountain Brigade behind the Rumanians, who once again were caught napping by the enemy's superior enterprise in the utilisation of mountain paths. By the 13th October the Rumanians were everywhere back to, or over, their frontier, but the idea of brushing them quickly aside had not materialised.

G.H.Q., however, still adhered to its strategic conception and now regrouped the Ninth, First and Seventh armies under the Archduke Charles, to Falkenhayn's great annoyance. Army Group orders to the latter were to the following effect—

"Our task is to complete the destruction of the enemy forces opposed to us before they can be reinforced.

"Responsibility for effecting this object rests primarily with you.

"The main Rumanian Armies are to be sought out in the direction of Bucharest, and that will be the general direction of your attack.

"The right wing of your army—the reinforced Alpine Corps—will be directed on Curtea d'Arges, whilst the troops in the Petroseni and Orsova areas will take every opportunity of advancing on Craiova.

"The choice of directing your main attack on Campulung, Targoviste, or Ploesti is left to you, in accordance with where you succeed in penetrating the frontier defences. The strong cavalry reinforcements shortly arriving (6th and 7th Cavalry Divisions) will enable you not only to guard your left flank in the direction of Buzau, but also to separate the enemy groups by pushing forward into the lower Sereth valley.

Falkenhayn, as usual, objected; G.H.Q. was appealed to and issued fresh directions. Falkenhayn considered them just as bad, on the grounds that he had insufficient force for an advance on Bucharest and wanted the cavalry on the other flank to that indicated by the Group Command. Moreover, he entirely disapproved of the enterprise towards Onesti, because it tended to divert reinforcements from his own army. Nevertheless he obeyed orders to the extent of maintaining pressure on the Brasov group of passes, and continued his efforts to debouch from Dragoslavele into the more open country round Campulung. At the same time he went on with his preparations for attacking down the Olt. This, if successful, would, in conjunction with a converging attack through Campulung, give him the vital junction of Pitesti, and so cut all railway communications with Western Wallachia. This again should tend to draw Rumanian reinforcements away from the Brasov group of passes and thereby facilitate the main task allotted to him, viz., a direct advance through them on Bucharest.

First Battle of the Olt, 15th-21st October. (Map. 6).

The battle of the Olt opened on the 15th October, the plan comprising wide outflanking attacks over the mountains by the 10th Austrian Mountain Brigade on the right, and the newly arrived 2nd Austrian Mountain Brigade on the left, whilst the Alpine Corps advanced astride the main Olt road on a front of about eight miles. Supply was the main difficulty as the flanking columns moved over mountain paths involving some stiff climbing. It is not proposed to follow this battle in detail, as it developed into a "slogging match." By the evening of the 15th the attack had made good progress, but on the 18th the Rumanians commenced a series of counterattacks and the weather turned suddenly cold. Paths became icebound and slippery, and supply of food and ammunition over the mountains increasingly difficult for the Germans, though every able-bodied man and woman of the inhabitants was forcibly enlisted by the Germans for compulsory transport labour.

The Austro-Germans struggled on and by the 21st had got within six miles of Ramnicu-Valcea, but they had shot their bolt and could make no further headway. Then, in the face of repeated counterattacks and running short of ammunition, they were forced back 12 to 15 miles, having suffered considerable losses. The operation had totally miscarried. On the other hand, the fact that they remained in possession of a somewhat more forward line than before, would assist a second attempt; moreover, the Rumanian casualties had been very heavy.

The spell of cold weather had had an equally unfavourable effect on German operations south of Brasov, the Rumanians contesting strongly any enemy attempts to advance, and severely handling some of the isolated columns.

On the 21st October, Falkenhayn reported to G.H.Q. in the following sense:

"The bad weather and the lateness of the season makes it questionable whether it is worth while to repeat similar attempts.

Short of proper equipment for the individual soldier, of mountain artillery and pack transport, attacks over frozen or snow-covered hills against prepared positions backed by adequate communications have little hope of success. On the other hand, the inhabitants say that winter proper has not yet arrived, etc., etc."

This tale of woe naturally led up to a request for reinforcements. In the meantime he determined to make another attempt to break through, this time *via* the Vulcan and Szurduk passes, down the Jiu valley. As it resulted in one of the most interesting battles of the war, it will now be described in some detail.

The First Battle of Targu Jiu, Oct. 23rd-30th. (Map 7).

The troops to be employed for a break through over the Vulcan and Szurduk Passes were the 301st Division (comprising the 144th Austrian Brigade, 2 Batteries and 2 Cyclist Battalions), a fresh Division (the 11th Bavarian), and the 6th German Cavalry Division (3 Brigades). The 7th German Cavalry Division and two fresh Infantry Divisions were under orders and would be available to exploit the expected success.

The Rumanians, who were holding the main crest of the frontier range, consisted of some 13 battalions and 7 batteries. The Austro-German superiority was, therefore, assured provided the defence were not reinforced. Attacks on the Orsova front were designed to prevent this; moreover it was hoped that the attack of the Alpine Corps down the Olt valley would have tended to draw troops from the Jiu and so further weaken the defence. Neither assumption proved correct. The Szurduk Pass, the cleft formed by the Jiu, being extremely narrow and easily defensible was considered too difficult a proposition. The German plan, therefore, followed the usual lines of an envelopment of both flanks, its distinctive and unusual feature being the use of the cavalry. The initial difficulty which faced the Germans was to surmount the great mountain barrier which rises like a wall from the valley of the Rumanian Jiu. Once over the crest, the slopes down into Rumania would be comparatively easy. Paths led over the D. Arcanlului and D. Lescului, up to the head of the Vulcan Pass, and on the East of the Jiu valley from Livazeny to the head of the military road. Every effort was made to render these suitable for all arms, but in many places vehicles could only be got forward by using holdfasts and winding gear. The troops themselves were provided with special clothing to protect them against the rigours of the mountain climate.

The deployment for the attack is shown roughly on Map 7. The 6th Cavalry Division was preceded by an Austrian Infantry Battalion to clear a way through the mountains. The Cavalry was then to push forward into the plains and attack the Rumanians in the rear, taking no notice of the battle for the Szurduk Pass—a task somewhat similar to that which had been allotted to the Alpine Corps in the Battle of Sibiu. The weather had greatly improved and when the attack opened

on the 23rd everything went according to plan.¹ By the evening of the 25th the leading Brigade of the Cavalry had emerged from the wooded hills and the Division could prepare for an attack on Borosteni and Francesti, which barred the way into the Bistrita valley, whilst in the centre the advance had got half way through the Szurduk Pass. On the evening of the 26th further progress had been made to the line Dobrita, Stanesti, Sambotin, Burnici, and the cavalry had taken Borosteni, though a Rumanian detachment from Orsova still held Francesti. Reinforcements had arrived in the shape of the 7th German Cavalry Division; the open country lay but a short distance in front, and though progress east of the Pass had been but slow, the sun was shining; the Kaiser had telegraphed congratulations; the Germans were, in short, thoroughly pleased with the situation. Falkenhayn's Cavalry Corps Commander, von Schmettow, was ordered up to take command of the two cavalry divisions. His instructions were not to wait for the opening of the Szurduk Pass, but, relying on the communications over the D. Arcanlului and the Vulcan Pass, to carry fire and sword into the plains of Wallachia and live on the country. The Rumanians, however, had not been idle, and on the next day (27th) the situation underwent a dramatic change. Whilst the original defenders of the pass had been falling back fighting, reinforcements had arrived from both Pitesti and from Orsova, raising the available forces to about 20 battalions. The advanced *échelon* of the Orsova detachment, arriving by forced marches, had already, as we have seen, held up the German Cavalry at Francesti. The remainder were disposed for an enveloping attack of the German right centre.

With the Pitesti detachment a general reserve had been formed near Targu Jiu, which now deployed so as to attack the German left in flank across the Jiu in a north westerly direction. When, therefore, the German columns spreading out on a 12-mile front confidently continued their advance in the morning mist in an endeavour to seize Targu Jiu and cut the pass road behind the detachment defending it at Bumbesti, they were assailed from both flanks, and the Rumanians also penetrated between the isolated columns, which fell back in confusion. In order to secure a good jumping off position for the expected reinforcing divisions an unsuccessful effort was made by the Germans to stand on the line Dobrita-Sambotin. Another line was then organised, from Hill 1191 to Plesa, the 7th Cavalry Division being ordered forward for the purpose; but on the 29th the Rumanians swept this away also.

The position of the 6th Cavalry Division was now precarious, and was rendered worse by a change in the weather, which turned to snow and rain. Unable to advance, its communications rendered useless by snow and mud, it commenced a painful retreat back into the mountains, abandoning guns and vehicles, and destroying horses to

¹ NOTE.—General Culcer on 24th October proposed a retirement to the Olt and was replaced in command of the 1st Army by General Dragalina, who was mortally wounded during the battle.

avoid their capture by the enemy. The Rumanian pursuit was, however, gravely affected by the weather conditions, which Falkenhayn admits saved the remnants of his forces, and on the 30th October, to his great relief, the line was stabilised as shown on the map. The Rumanians buried over 1,500 dead, and took 1,600 prisoners, with great quantities of war equipment of all kinds, the 11th Bavarian Division in particular suffering heavily as regards both men and material. Falkenhayn attributed the reverse very largely to the failure of his Orsova detachment to hold the Rumanians on their front. This, no doubt, was a contributory cause, as was also the bad timing of the Alpine Corps' attack, which had definitely failed before the Jiu offensive commenced. Strategically the Rumanians made good use of their local position on interior lines; tactically they were able to throw in a comparatively strong general reserve at the psychological moment when the enemy was fully stretched out in isolated columns unable to support each other, and on the wrong side of a formidable obstacle which might well convert defeat into disaster. On a smaller scale the Germans stood in much the same position as had been the Rumanian armies during their initial deployment and advance into Transylvania. Once the impetus of the advance was stopped by the defeat of any one important fraction, the whole edifice toppled and then crashed. Unfortunately for the Rumanians, the enemy, though defeated, had secured some important gains. He had advanced his jumping-off line some 10 miles through the Szurdok Pass. In his new positions on the forward slopes he was able to improve communication over the mountains behind him for a renewed attempt by the reinforcing divisions; he had acquired a knowledge of the country in front of him and of the preparations necessary before a fresh attack could be launched with good chance of success. These preparations were now put in hand with the greatest energy, with a view to attacking on 11th November.

Leaving the Jiu for the moment, let us see what was happening on other parts of the front, in order to bring the story up to the critical date, 11th November, when the supreme effort was to be made to burst into the plains and crush the Rumanian resistance before winter descended on the mountains. Space only permits of a very brief summary, but reference to Map 6 will, it is hoped, make the resulting situation tolerably clear.

EVENTS IN THE DOBRUDJA FROM 10TH OCTOBER TO 10TH NOVEMBER.

The failure of the Rumanian combined offensive in the Dobrudja and across the Danube at Rohovo at the beginning of October has already been mentioned.

About the middle of October Mackensen received reinforcements and on the 19th attacked the Russo-Rumanian positions covering the important Constanza-Cernavoda railway. The salient features of the battle were that the Russian Commander was completely surprised, being in the act of moving the Cavalry Division and the 3rd Siberian Division

across to the other bank of the Danube, to meet a supposed German attempt to cross. His numerical superiority was, therefore, partly nullified and the German artillery did the rest. A Russian division in the centre was routed, carrying with it the units on either flank; the 9th and 19th Rumanian Divisions were also driven back; and the Serbian Division, standing like a rock at Topraisar, was almost surrounded and annihilated.

The defeat was complete and led to the precipitate retirement of the whole line. On the 21st the enemy reached Medgidia; on the 23rd, Constanza, Rumania's most important seaport, was taken, and with it were lost important stores of grain and oil, which were either burnt or fell to the enemy. The 2nd and 5th Rumanian Divisions held Cernavoda as a bridgehead until the 25th, when it, too, was evacuated for fear of a second Turtukai. By the 26th the bulk of the Russo-Rumanian army was 20 miles north of the railway, and was only halted on the 29th after a retreat of 60 miles on the line Ostrov-Babadag, owing to the arrival of Russian reinforcements and the discontinuation of the pursuit.

The strategic results of this defeat were important. The intended Russo-Rumanian offensive into Transylvania, which might have relieved pressure on the rest of the Rumanian front, was delayed by the diversion of troops to the Dobrudja. The moral effect was equally great, and not the least unfortunate aspect was that fuel was lent to the fires of distrust between Rumanians and Russians, each blaming the other. At Rumania's request, Zaiontchkovsky, who was held to have neglected the most elementary military precautions, was replaced by Sakharof of Manchurian fame.

Of the four Rumanian divisions, all of which had suffered very heavily, one division was reconstituted out of the 9th and 19th (9/19), and the 2nd and 5th were withdrawn to form the 2/5th Division.

Meantime Mackensen, selecting the shortest line covering the Constanza-Cernavoda railway, left four divisions and a cavalry division to hold it, and with the remainder marched back to south of Bucharest in readiness to cross the Danube. When Sakharof advanced on the 7th November, the delaying forces fell back to the prepared position, devastating the country behind them, and so held him up until events in Rumania automatically stopped the Russian attacks.

Whether the Germans had ever intended to force the Danube behind Bucharest in continuation of the offensive of the 19th October is an open question. Hindenburg says that any idea of a further advance with a view to crossing the lower reaches of the Danube into Rumania was abandoned owing to the difficulty of getting bridging material forward, due to the command of the Danube by the Rumanian batteries and the absence of railways in North Dobrudja. It is probable that the delay in the advance of the other arm of the pincers on Bucharest was the determining factor, and that the more modest scheme of cutting off western Wallachia had to be adopted in consequence. In any case Mackensen's strategy had been brilliantly successful. His initial attack had wrecked the Rumanian offensive into Transylvania; his subsequent

retirement had caused them to divert forces to the southern front, in the hopes of finishing him off—forces which might have saved the situation at the battles of Sibiu and Brasov. His second offensive delayed the Russo-Rumanian offensive in the North, and his second retirement kept strong forces occupied whilst the main decision was being obtained elsewhere. By noisily banging at the back door he effectually distracted the defenders at the front entrance at the most critical moments. It would be hard to find in history a better example of the effective use of detachments.

The Operations of the Fourth Rumanian Army.

The retirement of the Fourth Army was not seriously interfered with, the pursuing Austrians having no great zest for fighting, and the Rumanians occupied positions covering the Moldavian Passes at leisure, while in the north the 14th Division repulsed without difficulty any attempts to force the Tolgyes and Bekas Passes.

Farther south the Rumanian situation was more difficult. Hindenburg's plan had aimed at cutting in through the Oituz and Uz Passes behind the Ghimes Pass and so severing the main line of communication of the Fourth Army up the valley of the Trotus. It will be seen from the map that this important valley runs for a considerable distance within easy reach of the frontier, from which a number of practicable routes run down into it, the chief being the Uz and Oituz Passes. The Rumanians were fully alive to the danger and had concentrated the 7th and 15th Divisions, with the 8th Division and the 2nd Cavalry Division in reserve, in the area.

From the 12th to the 26th October they made a determined resistance to the Austrian efforts to advance, and held their positions intact. The enemy, indeed, at one time penetrated through the Uz Pass and reached the railway; but a well-executed counterattack late on 18th October drove them back, with the loss of 1,000 prisoners and 12 guns.

Persisting in their intention to force the Moldavian frontier, the enemy put in the 10th Bavarian Division, which formed the reserve of the First Austrian Army, without any result. The 8th Bavarian Division, Falkenhayn's only reserve, was, to his great annoyance, also removed on 21st October and sent up in all available motor transport to restore the situation in the Oituz Pass.

The Fourth Army had held its own well. Moreover, it was being progressively relieved from the right by the Russians, who were gradually forming their striking force. But the concentration of the latter was much delayed by poor staffwork, by break of gauge on the Ukrainian frontier and by the miserable capacity of the Rumanian railways, which the Russians described as being even worse than their own. The diversion of troops to the Dobrudja also delayed matters. Still the position on the Moldavian front was satisfactory from the point of view of the defence, for if the Rumanian divisions had lost heavily, the Austrians were in no better case, and were quite incapable of further efforts.

The relieved Rumanian divisions were originally earmarked to show the Russians the way over into the Maros Valley, but, as will be seen from the map, they quickly found urgent employment elsewhere at the Predeal Pass and in the Valley of the Olt.

The Second Army Front.

Passing southwards, there had been considerable fighting at the Bodza, Bratocea and Predelus Passes, which had kept the tired 6th and 3rd Rumanian Divisions fully employed. In the Predeal Pass there had been heavy engagements from the 10th October onwards, in which the enemy forced the Rumanian 10th and 21st Divisions back to Busteni. These divisions were about to be relieved by the 10th and 4th Divisions, and we shall meet them again playing a prominent part at the Battle of the Arges; for the moment they were exhausted. In front of Campulung the 12th and 22nd Divisions were holding their own and preventing any further enemy advance by successful, if costly, counterattacks. As the result of the latter, Falkenhayn was asked for reinforcements, which he refused.

First Army.

On the Olt front the Alpine Corps, after its first unsuccessful effort, had again resumed the offensive, which resulted in considerable gains. A costly and unsuccessful counterattack by the Rumanians on the 28th was followed up by the Germans and the whole Rumanian right centre fell back, leaving a considerable number of prisoners in the enemy's hands. On the 29th the latter captured Titesti, whilst, farther south, on 6th November, a turning movement from the east resulted in the rounding up of 1,000 prisoners and the annihilation of several Rumanian detachments. On 10th November the Germans put in the newly arrived 216th Division with a view to exploiting their success. To meet the situation the 14th Rumanian Division from the Fourth Army had been brought up, whilst the 8th Division, arriving shortly after, started to prepare a rear position near Tigveni. The 13th and 23rd Divisions were made up to some sort of strength from the 20th Division, which now disappeared.

The Jiu front, where the Germans were preparing their main offensive, was held by mixed detachments of the 1st and 11th Divisions. The only preparations made to meet the coming onslaught, which, in the absence of air observation, was apparently quite unsuspected, were a project for forming a general reserve at Pitesti.

Looking at the general picture shown on Map 6, the comparative absence of a general reserve on either side is remarkable.

Falkenhayn's consisted of the 3rd German Cavalry Division (three regiments) at Brasov, but a succession of divisions were moving from other fronts which completely safeguarded him, even had the Rumanians been in a position to attack. The watchfulness of G.H.Q. as to the security of the First Austrian Army, in view of the growing Russian

concentration, is understandable; but here, again, it would be an easy matter to divert reinforcing divisions as they arrived.

The Rumanian situation was obviously much more serious, their sole reserve consisting of the 8th, 10th, and 21st Divisions, which were being relieved and urgently in need of a rest; the 17th Division at Pitesti, the 2/5th reforming in the Dobrudja and the two cavalry divisions—a very meagre reserve for a front of nearly 300 miles, excluding the Danube front. The chronic absence of any reserve was, perhaps, the most striking feature of Rumanian strategy, any reserve formed by the armies being promptly seized upon and thrown by G.H.Q. into the furnace on some other part of the front. It would seem that the Russians would have been well advised to repair this obvious deficiency by some more direct means than their Transylvanian offensive, of which more anon. Their answer still doubtless was—"shorten the front." It must further be noted that the number of Rumanian divisions gives very little indication of their fighting value. Most of them had been continuously in action without relief for long periods, during which their losses had always been heavy owing to having to compensate for lack of fire-power by weight of numbers. Judging from the reports of foreign observers, the normal course of events appears to have been for the Germans to open a surprise attack covered by a concentration of artillery, under which the Rumanians, who had practically no telephones and whose ideas of entrenching seem to have been rudimentary, evacuated their positions. Reinforcements were then hurried up, usually in excessive numbers, and counterattacks were launched. Whilst these often succeeded, the Rumanians suffered inordinate losses from machine-gun and artillery fire, and the survivors were worn out by marching and countermarching. All ranks were becoming imbued with the belief that it was impossible to stand against the enemy's heavy artillery. Lest this remark should appear unnecessarily severe, it may be mentioned, on the authority of Hindenburg, that the Bulgarians showed a similar weakness in face of the Allied artillery on the Salonika front. That the Rumanian soldier allowed himself to be sent forward time after time on such enterprises speaks volumes for his individual courage. Losses had already amounted to some 200,000, and though trained men to replace them existed, the extent to which they could be used depended on the available rifles, which were insufficient. Consequently, whilst battalions in the Northern Army averaged 1,000, those in the First and Second Armies were no stronger than 700.

The composition of divisions varied from 12 to 25 battalions, and averaged about 13. In artillery they equally lacked homogeneity, the divisional artillery varying from 6 to 12 batteries. All this, of course, greatly complicated staffwork. It was not a case of *a* division but of *which* division. In some cases it had been found necessary to double up formations (9/19, 2/5), the 20th had disappeared, and in the 4th—ominous sign!—cholera had made its appearance.

Efforts were being made to reorganise the army on a more logical basis and to form reserves, but, whilst heavy fighting was going on

everywhere, the difficulties were enormous. The Rumanian Army badly required a winter in which to reorganise and refit: it failed to get it by just about a fortnight.

If the situation of the army was not encouraging, the *morale* of the population was certainly no better. As early as the 14th October orders had been issued for the evacuation of the Government to Jassi, and, though countermanded on the receipt of more encouraging information, everyone was on tenterhooks, whilst the poorer-spirited politicians openly discussed the necessity for a separate peace.

The arrival of the Russians dragged on interminably amidst mutual recriminations, the Russian staff attributing the delay to the fact that their reinforcements had to march from the frontier owing to the different gauge of the Ukrainian railways which involved transshipment at the frontier, and also to inability of the Rumanians to supply rolling stock. Indeed the Rumanian railways were totally unable to cope with the masses of troops which were now converging on the country, or being hurried from side to side. The date for the grand counter-offensive was postponed from the 31st October to some later date which no one could specify; meanwhile the Russian troops were eating up the country.

So far as may be judged from telegrams sent at this time, the Russians displayed no particular anxiety as to the situation. Indeed the opinion expressed at Russian Headquarters was that the German plan had failed owing, firstly, to Falkenhayn's inability to break through towards Bucharest and, secondly, to the failure of Mackensen to annihilate the forces opposed to him in the Dobrudja. In these circumstances it was thought that the initiative could be regained by Russian offensives into North Transylvania and in the Dobrudja, which would automatically relieve pressure on the Rumanian front and so enable them to tide over the period before winter came to their assistance. The Ninth Russian Army in the North, under General Letchitsky, was to consist of at least 11 infantry and 5 cavalry divisions, and any available Rumanian divisions were to co-operate. The date suggested for the attack—the Russians were very vague—was the 14th November, and Brussilof's other armies further North were to advance simultaneously. The divergent offensives may be open to criticism. It is not at all clear what the Dobrudja attack as a main operation was expected to effect, except to play the German game. One suspects an ulterior motive, and the promise of Constantinople, to which the Dobrudja was the shortest route, may supply the answer to the problem.

As regards the Northern offensive, Falkenhayn, for one, considered that it had no chance of producing any effect in time to forestall his own attack. The season was too far advanced, and the Rumanians would have to cross 100 miles of mountainous country of no strategic value, before reaching the important Maros valley. Moreover, he points out that the destruction of the railway viaducts west of the Ghimes Pass rendered the supply and maintenance of large forces impossible. Consequently, despite the parlous condition of the Austrians holding the

Northern front, he thought that his superiors were overcautious in retaining the 8th and 10th Bavarian Divisions in the North. The feasibility of a large scale Russian offensive was never actually put to the test, so we must leave it at that. Assuming, however, that the Russians had succeeded in initiating a powerful attack in the North at the same time as Sakharof advanced in the Dobrudja and, assuming that the Rumanian centre held its grounds long enough to enable these offensives to develop fully, the initiative might perhaps have been secured, and with it the salvation of Rumania.

Unfortunately the Russian plan was based on wrong information as regards the enemy, which was perhaps excusable; and equally faulty ideas—or indifference—as regards the resisting powers of the Rumanians, which was criminal.

The German Plans.

The German plans have been so fully dealt with in the course of the foregoing narrative that little remains to be said. The cessation of attacks on the Salonika and Italian fronts due to the approach of winter; the exhaustion of the Russians, combined with their lack of ammunition and the state of the roads, which had not yet frozen; the obvious improbability of the Franco-British offensive on the Somme achieving any great result at so late a period in the year, all combined to set free German troops. In Rumania alone could a clear cut decision be obtained, and then only if the Transylvanian barrier were to be crossed before the end of November. The conclusion was obvious, and the Germans lost no time in acting upon it. Thanks to the excellent railway system in Transylvania, reinforcing divisions could be detrained with precision as regards time and place, and they were successively brought up (*vide* map 6) in an ever-increasing stream. The 8th, 10th, 11th and 12th Bavarian Divisions, the 41st and 109th German Divisions, and 6th and 7th Cavalry Divisions and other smaller formations and units were to be followed by the 115th and 216th Divisions, and various Austrian Divisions. The nature of the plan, which consisted of a general attack all along the front with the main blow down the Jiu, is clearly shown by the movements of the reinforcing divisions (map 6). South of the Danube stood Mackensen with 1 German, 2 Bulgarian, 1 Turkish Division, and 1 mixed Cavalry Division ready to advance on Bucharest, in conjunction with Falkenhayn, as soon as the latter was far enough forward to hold out a hand. Thus the Germans hoped to repeat the converging movement so brilliantly successful at Sadowa in 1866 and in the winter battles of 1914 amongst the Masurian lakes.

The Second Battle of Targu Jiu, 10th-17th November. (Map 8.)

We left Falkenhayn making preparations for an attack down the Jiu Valley with fresh troops. His reasons for selecting this particular front were briefly as follows. The main mountain barrier was narrower here than elsewhere, and it was possible for troops to get through in one

long march. Then, again, the country on either side was known, and the Germans held the exit of the pass; lastly, it was probable that the Rumanians would not expect a second attack from this direction after the disastrous failure of the first. Whilst the new commander of the Petroseni group, General Kuhne, was making his preparations, Falkenhayn was engaged in the usual wrangle with superior authority, which we need not go into, the fact being only mentioned to show that the German machine by no means always worked smoothly.

Since all efforts to obtain a surprise by dispersion had failed, this new attempt was to follow the accepted principle of concentration and rely chiefly on weight, though it was hoped that the element of surprise would not be entirely lacking. The previous failure had shown the danger of depending on mountain tracks, and the experiences of the cavalry in particular did not encourage their further employment for turning movements in mountain warfare.

The problem was thus to get the bulk of four infantry divisions followed by two cavalry divisions—60,000 men and 30,000 horses—with all their vehicles, through a defile 20 miles long, along a single road which allowed only one stream of traffic in each direction, and get them through quickly before the Rumanians could bring up reinforcements. Throughout the 20 miles the valley opened out at only one small spot, two-thirds of the way through; otherwise there were no places for bivouacking or for parking vehicles or stores off the road. This, it will be agreed, presented a very serious staff problem, even though the Germans held the southern exit. The arrangements for it took the best part of a fortnight, which was spent in getting the artillery forward into position, improving the road, forming dumps, and making arrangements for traffic control.

This latter was worked out in the greatest detail on the lines of a railway timetable, the necessary day and night signals, telephone connections, etc., being duly installed. The general scheme of attack was for the two leading divisions, the 41st and 109th, to advance and deploy on either side of the road, supported by a powerful concentration of artillery, whilst the 11th Bavarian and the 301st were to follow, in column of route, and fan out as soon as the leading divisions had cleared the enemy from their positions commanding the end of the Pass. The Cavalry Corps was to wait north of the Pass until the infantry had gained sufficient room for them to get through and manœuvre. A fifth infantry division (115th) was being railed up behind as a reserve.

The Rumanian forces available to oppose this human avalanche consisted of the equivalent of one tired division. In addition, there were available as potential reinforcements three battalions from the Cerna; one battalion from the Olt, where the Rumanians were fully employed in stopping the Alpine Corps; and the 17th Division at Pitesti.

The attack opened on the 10th November by the capture of the Muncelul and Urina Boului, and on the following day the great movement began. By the evening of the 11th the two leading divisions (41st and

109th) had secured the line D. Lesului-Bumbesti-Postaia, thence running N.E. on a front of 15 miles. The Rumanians were fighting well, particularly east of the pass, where they were still in position to bring long-range fire to bear on its exits. The permanent fortifications at Bumbesti had been effectively demolished by the concentrated fire of the German artillery, and the two supporting divisions, waiting west of the pass, were ordered to advance. All next day and the following night an unbroken stream of troops and transport, favoured by perfect weather and a full moon, poured through the pass, the 301st Division then moving to the east, the 11th Bavarian Division to the south-west. Meanwhile the two leading divisions continued to gain ground slowly in the face of obstinate opposition, which was crushed by the German artillery. By the evening of the 13th the front ran east and west through Sambotin, whilst the 11th Bavarian Division was concentrated north-west of Sambotin and the 301st Division was near Dragoesti, facing east. The next day (14th) the line had advanced to Turcinești, the Rumanian resistance was weakening; whereupon orders were sent back to the Cavalry Corps assembled north of the pass to advance as rapidly as possible, its instructions being as follows:—

"The Cavalry Corps will take up an energetic pursuit.

"Our first objective is Filiasu. The task of the Cavalry Corps is to harass the retreat of the enemy, who is falling back in front of the LIVth Corps (41st, 109th, 11th Bavarian, 301st Division).

"The Cavalry Corps must so direct its march as to be able to envelop the enemy if he makes a stand against the LIVth Corps."

In pursuance of these orders the Cavalry Corps passed through the front, and 24 hours later (night 15th/16th) its 7th Division was deployed south and south-west of Targușiu, with the 6th Cavalry Division on its left, whilst a detachment sent out to cut the railway successfully accomplished its mission at a point between Targușiu and Petrești. Comparing this movement with the periodic advances of our own Cavalry Corps in France, and remembering that it had to be carried out by a single road, it will be agreed that it represented no inconsiderable achievement.

The most difficult part of the operation appeared to be over. Air reconnaissances reported the Rumanians to be falling back everywhere, and the break through at last appeared to be complete. Next morning (16th), however, when the German cavalry attempted to push on southwards, they found that this was by no means the case, for in actual fact the Rumanians were endeavouring to repeat the successful enveloping manoeuvre of the first battle of Targușiu. With this object the Rumanian 11th Division was ordered to hold the hills between the Gilort and the Motrul Valleys on the line Seasa-Vacarea-Valeni-Carbesti, whilst the Cerna detachment held Cetatea, and the 17th Division attacked from the Gilort Valley, where it was beginning to arrive, its progress having been delayed by a railway accident half-way between Pitesti and Slatina. Meanwhile the Olt detachment was directed to hold up the advance of the 301st Division eastwards.

The German commander, finding the way barred by the Rumanian position in the hills, immediately gave orders to the cavalry to attack, with the object of enveloping the Rumanian left, but the cavalry failed to capture the hills near Cetatea and Carbesti and met with no success in the centre.

The 41st, 109th and 11th Bavarian Divisions were then ordered forward to relieve the 6th Cavalry Division, and to attack the Rumanian centre frontally, but rain and snow delayed the movement and only the 11th Bavarian Division on the left got into action towards Petrestii against the leading *echelons* of the 17th Rumanian Division, which was hurried forward unit by unit as it detrained. The 301st Division and a cavalry detachment made no progress, and hours which might be vital were being lost.

In these circumstances the Germans decided to pull out the cavalry and try a wider sweep westwards round the Rumanian left. The 6th Cavalry Division was successfully relieved, although in actual touch with the enemy, the operation being covered by the snowstorms, and marched back to Targuiu. Thence it made a *détour* behind the 7th Cavalry Division, and next morning was ready to advance from Vladoi, having covered a distance of 20 miles in bad weather along vile roads. Rumanian reinforcements were arriving, and it was only a question of time for their pressure against the German left from the Gilort valley to become a serious menace. The promptness with which the cavalry manoeuvre was decided upon and carried out had a determining effect on the operations, thus showing the transcendent importance of mobility when combined with firm and quick decision.

It snowed heavily on the night 16th/17th and all rearward signal communications were interrupted, but next morning (17th), a frontal attack by the German 41st and 109th Divisions in the direction of Trocani had by 11 a.m. driven a wedge through the Rumanian centre. At the same time the cavalry and armoured cars from Vladoi advanced 25 miles *viâ* Brosteni down the Motrul valley, thus completely turning the Rumanian left, whilst a detachment sent back north-east from Rosiuta attacked the Cetatea positions in the rear, and thus cleared the way for the 7th Cavalry Division. The Rumanians holding the hills about Valeni were surrounded, and the whole left and centre broke up, 3,500 prisoners and several guns being captured by the Germans. Now threatened from the north-west and west, the 17th Rumanian Division, with the survivors of the 11th Division, fell back across the Gilort to the east and south-east, blowing up the bridges.

On the 19th Filiasu was occupied by the Germans, and Craiova on the 21st November.

The defence put up by the Rumanians, however, had gained sufficient time to permit of the evacuation of all warlike stores, and the blowing up of many of the bridges. Whether the First Army with the resources at its disposal could have stopped the enemy may remain an open question. Luck was with the latter in the matter of the weather, for had the snow

come a few days earlier the difficulties of passing through and deploying from the Szurduk Pass would have been greatly increased. The Rumanians started badly owing to the failure of their Intelligence to give them any warning of the impending attack, and the attention of the First Army Command appears to have been engrossed until too late by the situation in the Olt Valley. Thus the 17th Division did not commence to arrive in the Gilort until the 16th, six days after the German attack started; partly no doubt owing to the railway accident, it was put in by dribblets, and therefore never had the effect which a concentrated attack might have produced. The attention of Rumanian G.H.Q. also was taken up until too late by events nearer Bucharest, where failure would be much more disastrous, and the First Army received no assistance from this direction, though G.H.Q. might perhaps argue that the First Army already had its full share of the scanty reserves. Falkenhayn's repeated tapping along the front had achieved his object of exhausting the Rumanian soldiery, of keeping their staff guessing, and of making them eventually guess wrong. On the other hand, the Rumanian resistance had forced him to make his effort a long way from Mackensen and Bucharest, *i.e.*, in strategically the least favourable position, whilst the arrival of the 17th Rumanian Division had tactically prevented any envelopment of the Jiu group on its inner flank.

Even so, the situation from the Rumanian point of view was sufficiently serious. The western end of Wallachia was cut off, and the road to Bucharest lay open across the plains, with only one good defensive position, the Olt, on which to stop the enemy. Moreover, the 115th German Division had detained at Petroseni and was already moving forward on the 18th. Every day the avalanche was gathering strength; and, unless it could be stopped, must seriously affect the situation in the passes on either side.

The position of that portion of the 1st Rumanian Division posted at Orsova was obviously hopeless. Its subsequent operations form one of the brightest episodes of the war on the Rumanian side, but can only be briefly sketched. The detachment continued to block the Danube until 22nd November, and then commenced its retirement in front of the Austro-German force which it had for so long successfully opposed, being threatened in the rear by a mixed German detachment of one regiment cavalry, one battalion infantry, and a few guns, detached from Targu Jiu to cut it off. It turned the tables on the latter by driving the infantry battalion into Turnu Severin, where it only maintained itself with the assistance of the Bulgarians. The Rumanians then fought their way back as far as the lower Olt, where on 6th December they found the way barred by a chance detachment from Mackensen's Army which had meantime crossed the Danube. There they were forced to capitulate on the day after Bucharest fell, 10,000 men and 40 guns falling into the enemy's hands. They had remained a force in being until the last possible moment when they could exercise any influence on the operations of their main army.

To the east the retreat of the First Army from the Jiu uncovered the left and rear of the Rumanians astride the Olt exit from the mountains, where they were successfully holding up the Alpine Corps and the newly arrived 216th Division. This latter had been put in here by Falkenhayn owing to the fact that the railways could not deal with any more troops on the Petroseni-Jiu front. The Germans again assumed the offensive on the 15th November and, despite the employment of the 8th Division, pressed the Rumanians back, the latter gradually evacuating the hills west of the Olt and swinging back their left so as to be in a position to join hands with the remainder of the First Army should it succeed in making a stand on the river line against the enemy advancing from Craiova.

Further east, again, the Germans, with the aid of the fresh 12th Bavarian Division, made strenuous efforts to reach Pitesti from the direction of Campulung, but were brought to a full stop by 17th November; so much so that there was some talk of taking the 12th Bavarian Division back, and sending it round *via* Petroseni through the Szurduk Pass towards Craiova. Falkenhayn, however, vetoed this move, as it might take the best part of a fortnight, and ordered pressure to be maintained here to prevent the Rumanians from withdrawing troops for the defence of the Olt. Thus on this front also there was nothing yet in the shape of a *débâcle*.

In the Brasov Group of passes snow had practically put a stop to active operations, and Falkenhayn withdrew the 187th Division into Army reserve. Further north, the Russians had commenced local preliminary offensives which led to bitter fighting, but had no effect on the general situation, beyond keeping the Austrians and the 8th and 10th Bavarian Divisions fully occupied. The main offensive, for which 15 Divisions and 5 Cavalry Divisions were at last in position, was again delayed—possibly intentionally—by the summoning of Brussilof and Letchitsky to Russian G.H.Q. for a conference. It was eventually fixed for the 28th November, but before that date it had been progressively weakened by withdrawals to relieve the Rumanian Army.

As soon as the extent of the danger in the Jiu Valley became apparent to the Rumanian G.H.Q., which was not until 18th November, it was decided to concentrate all available reserves at Pitesti and launch a counterattack. By the 20th, however, it became evident that it was too late to save the situation in the Jiu, and the alternative plan was adopted of standing on the only good defensive line—that of the River Olt—to cover the regrouping of the Rumanian armies and organise a striking force. This measure would further gain time for the Russians to relieve the 9/19th Division in the Dobrudja, to take over down to the Predelus Pass, and to permit of the launching of their long-deferred offensive in the north. With this object a front was hastily formed under the orders of General Presan, the successful commander of the Fourth Army, as shown generally on Map 9.

The total forces available for the Olt front from Curtea d'Arges to

the Danube amounted nominally to some 120 battalions, 55 squadrons, and 108 batteries—the equivalent, say, of eight infantry and two cavalry divisions, all very tired and disorganised—to hold a front of 100 miles, which they had no time to strengthen or occupy systematically. Advancing from the west and north were Falkenhayn's six German and two Austrian infantry divisions and two cavalry divisions. Taking into consideration the overwhelming superiority of the enemy in all technical and material equipment, and their *morale* raised by victory, the Rumanian chances of success were not great.

The view expressed at Russian G.H.Q. was as follows:

"The Rumanians are now being forced back to positions which they should long ago have occupied and fortified. This line is well adapted to defence, and, in spite of training, equipment, etc., the Rumanians may be able to stand there till the Russians are ready to move and relieve pressure."

This view, however, entirely neglected to take into account Mackensen's Danube army.

THE GERMAN ADVANCE THROUGH WESTERN WALLACHIA AND THE CROSSING OF THE OLT (NOVEMBER 21ST-26TH).

We will now return to Falkenhayn's army (Kuhne's group), which we left entering Craiova. It was advancing south and south-east, spread out on a broad front, and much hampered by bad weather as well as by the demolitions effected by the Rumanians in their retreat. The cavalry had been equally delayed and Falkenhayn remarks that previous experiences had been confirmed—viz., that over a series of days cavalry in the mass can move no quicker than infantry. His air reconnaissances had told him of the movement of Rumanian reinforcements towards Pitesti and the Olt, whilst their preparations to swing back their line from the exits of the Red Tower Pass were also reported.

G.H.Q. now informed him that Mackensen was about to cross the Danube, and gave as a dividing line between the two armies the projected railway line Craiova-Caracal-Rosi de Vede-Bucharest. Kuhne's group was to attack in the direction Ploesti-Bucharest, the Alpine Corps co-operating with a view to clearing the remaining passes through the Transylvanian Alps. Falkenhayn disagreed with this strategic conception, pointing out that it would mean crossing a series of transverse spurs and valleys along semi-mountain roads, whereas an advance in the plains closer to the Danube would be just as effective in clearing the passes, and be far easier and quicker. He saw no reason to alter the orders issued on the 21st, which were to the following effect:—

The Cavalry Corps to advance and capture the bridges at Caracal and Slatina on the 23rd, reconnoitring up to the Danube on the right, and cutting the Pitesti-Rosi de Vede railway as soon as possible.

The leading infantry of the Kuhne group to cross the line Slatina-Dragasani on the 24th.

Dellmensingen's group (Alpine Corps, etc.), after reaching the line Raminicu Valcea-Curtea d'Arges to advance towards Pitesti.

Farther east the Kronstadt (Brasov) passes were to be attacked.

The new 115th Division to move to Craiova in pursuance of the plan for reinforcing the manœuvring wing—viz., the right.

On the 23rd the bridge at Stoenesti was captured almost intact by the cavalry, and a small bridgehead formed, which was well held against a weak Rumanian counterattack. Why this bridge had not been either blown up or properly guarded is not known to the writer, but its loss was naturally fatal to any Rumanian plan for holding the comparatively strong line of the Olt. Mackensen, apprised of this success, immediately commenced to cross the Danube farther east. On the 25th and 26th the whole of Von Schmettow's cavalry divisions were east of the Olt and driving back the Rumanian cavalry. Touch had also been established with Mackensen.

Meantime Kuhne's main infantry mass, consisting of the 41st and 109th and 11th Bavarian Divisions, was compelled to march on one road most of the way from Craiova to Slatina, owing to the demolitions carried out by the Rumanian rearguards, who appear to have executed their task very thoroughly. The 109th Division was then diverted southwards to follow the cavalry towards Caracal, whilst on the left the 301st reached Dragasani, where it found the bridge effectively breached.

Attempts by the centre column (41st and 11th Bavarian Divisions) to effect a crossing at Slatina on the 24th and 25th failed, for the bridges had been broken and the German bridging train had not come up, the river was in flood, whilst from the high ground on the eastern bank the Rumanians swept the approaches. Eventually the 11th Bavarian Division was sent south to follow the 109th Division across at Stoenesti, to which point the 115th, following behind, was also directed.

On the 26th the Rumanians withdrew under the threat to their left flank, and on the same day Kuhne's group obtained touch by motor for the first time with von Dellmensingen's group on the Olt. The whole front from the Danube to the Transylvanian Alps was in touch—weak touch, it is true, but still in touch.

Falkenhayn all this time was receiving messages from G.H.Q. at Pless urging the importance of pressing forward to help Mackensen, asking why he did not obey orders, and endeavouring to direct the movements of individual divisions. Apparently G.H.Q. had visions of rounding up the whole Rumanian Army against the Transylvanian Alps by swinging Falkenhayn's right forward and advancing it in the direction of Ploesti with Mackensen on its right. On the night of the 26th/27th Ludendorff, short-circuiting the army group commander, the Archduke Charles, telephoned personally that the Kaiser wished the Cavalry Corps to push

forward at once north of Bucharest without taking any notice of small intervening bodies of the enemy. All of which Falkenhayn considered showed that G.H.Q. knew nothing about the situation, either of his army or of the enemy. In his opinion the behaviour of the Rumanians seemed to show that no longer were they retreating in disconnected or uncontrolled columns, but were now being drawn back in pursuance of a definite plan. He was right, but perhaps he was only wise after the event.

Before concluding with these incidents, that led up to the battle of the Argesh, a few comments may not be out of place. As regards strategy, we have seen how the original German plan for pinching Rumania across the waist between the northern Dobrudja and the Brasov Passes had been abandoned in face of the Rumanian resistance in the latter area. The more modest, but still comprehensive, plan of cutting off the greater part of Wallachia in the region of Bucharest had similarly been defeated by the failure of the attacks down the Olt and Jiu in the latter part of October. The policy of dispersion had been no more successful in the case of the German efforts to advance than in that of the Rumanians. They only succeeded when they concentrated at one point whilst the defence was still dispersed. The actual break through had only been effected at the eleventh hour at the place least damaging to Rumania. Moreover, the tenacious resistance made by the defence in the Jiu Valley had enabled the Rumanians to extricate the forces in western Wallachia, with the single exception of the Orsova detachment.

It seems clear that the Rumanians should have taken steps to organise the defences of the Olt line before they were actually driven back on to it. Whether or no they would have been wiser to have retired earlier and in their own time to that line must remain a matter of opinion. The Russians certainly thought so, and their view was shared by the British General Staff and by at least one distinguished Rumanian commander. There is, however, much to be said on the other side, and we have an almost parallel case, when, after the German break through on the Western front in the spring of 1918, the advisability of retiring from the northern portion of the dangerous coastal zone behind a great series of inundations was actually considered, only to be immediately vetoed by Marshal Foch.

Retirements from highly organised positions to positions not so well organised are apt to be dangerous even with troops of good *morale*, and if, like Marshal Haig, the Rumanian C.-in-C. decided that it was better to issue a "backs to the wall" order, we should not lightly condemn it, nor conclude that any other course would have produced a better result without more intimate knowledge of the condition of the Rumanian Army at the time. The course of the subsequent battles in the plains tends rather to support the wisdom of the decision taken, as being possibly the lesser of two evils.

As regards tactics, in making plans for their successful offensive down the Jiu the Germans took facts as they existed, and events justified their conclusions. Without in any way wishing to belittle their achieve-

ments, it is, however, permissible to consider what would have been the result had the Rumanians disposed of an adequate number of machine guns and aeroplanes. Would the leading divisions have succeeded in forcing their way out of the defiles against the fire of automatic weapons? If they had done so, what would have been the effect of air attack on the endless column of troops and transport marching in the moonlight along the narrow road through the Szurduk Pass, a cliff on one side and a precipice on the other? Or, again, on the cavalry masses waiting at the north of the pass? Overwhelming air superiority alone rendered the movement possible; air inferiority in the air, as in all other technical equipment, contributed largely to the Rumanian defeat.

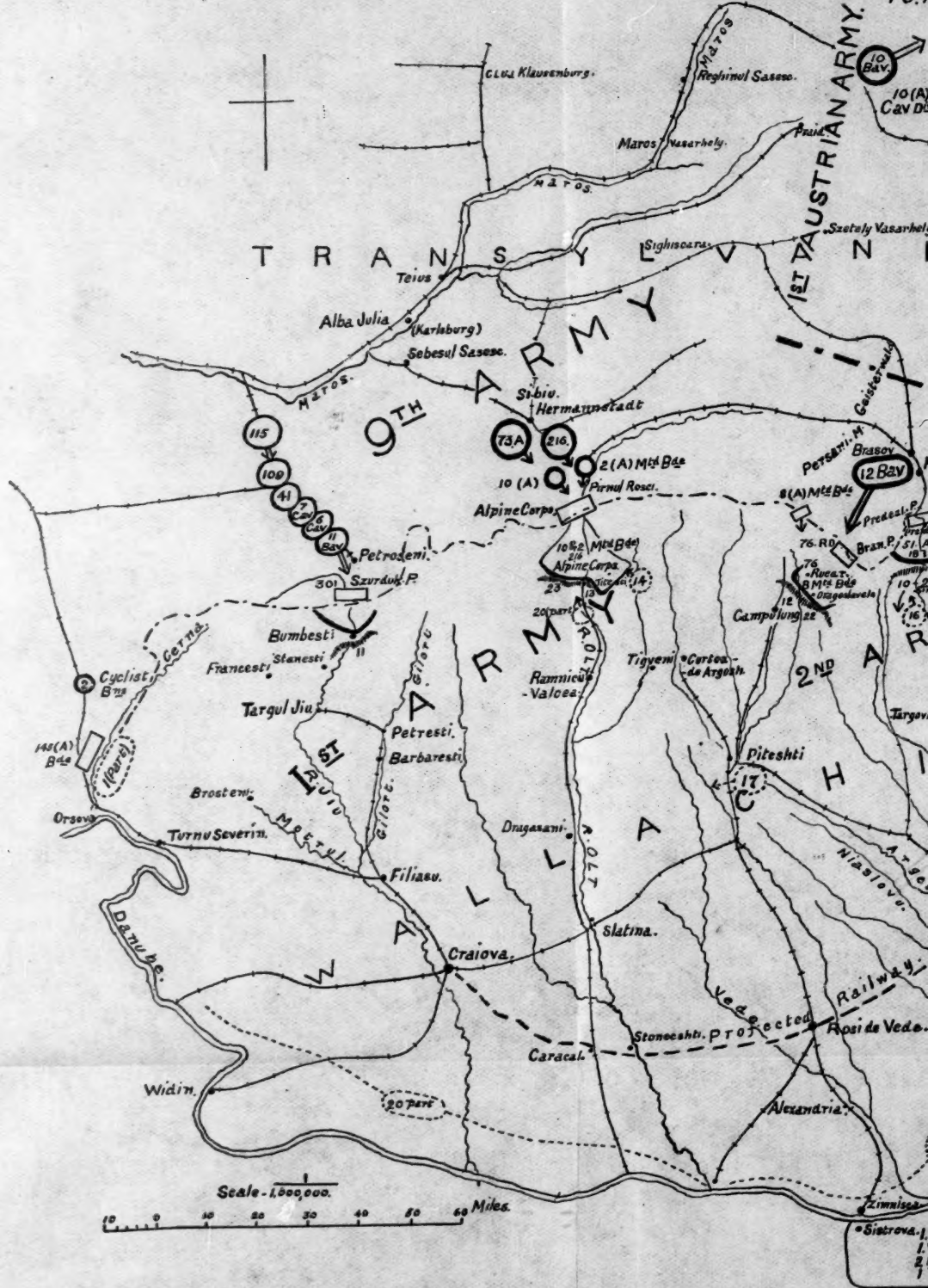
The fact that in spite of such inferiority he held the passes for six long weeks, waiting for the Russian counteroffensive which came too late, must be placed to the credit of the Rumanian soldier.

(To be concluded.)



GENERAL MAP

7TH AUSTRIAN
ARMY.



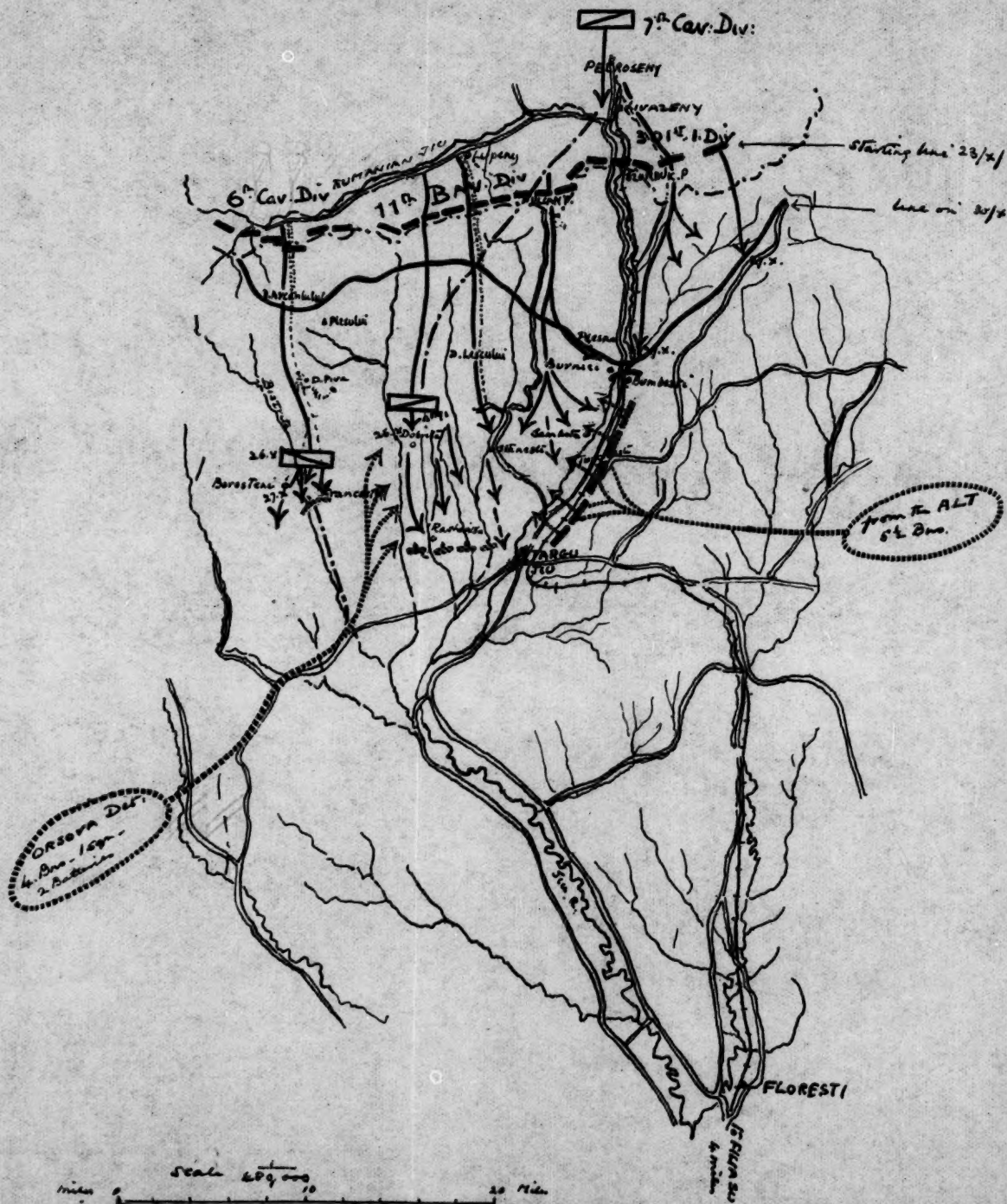
MAP OF RUMANIA

Map 6



FIRST BATTLE OF TARGU JIU

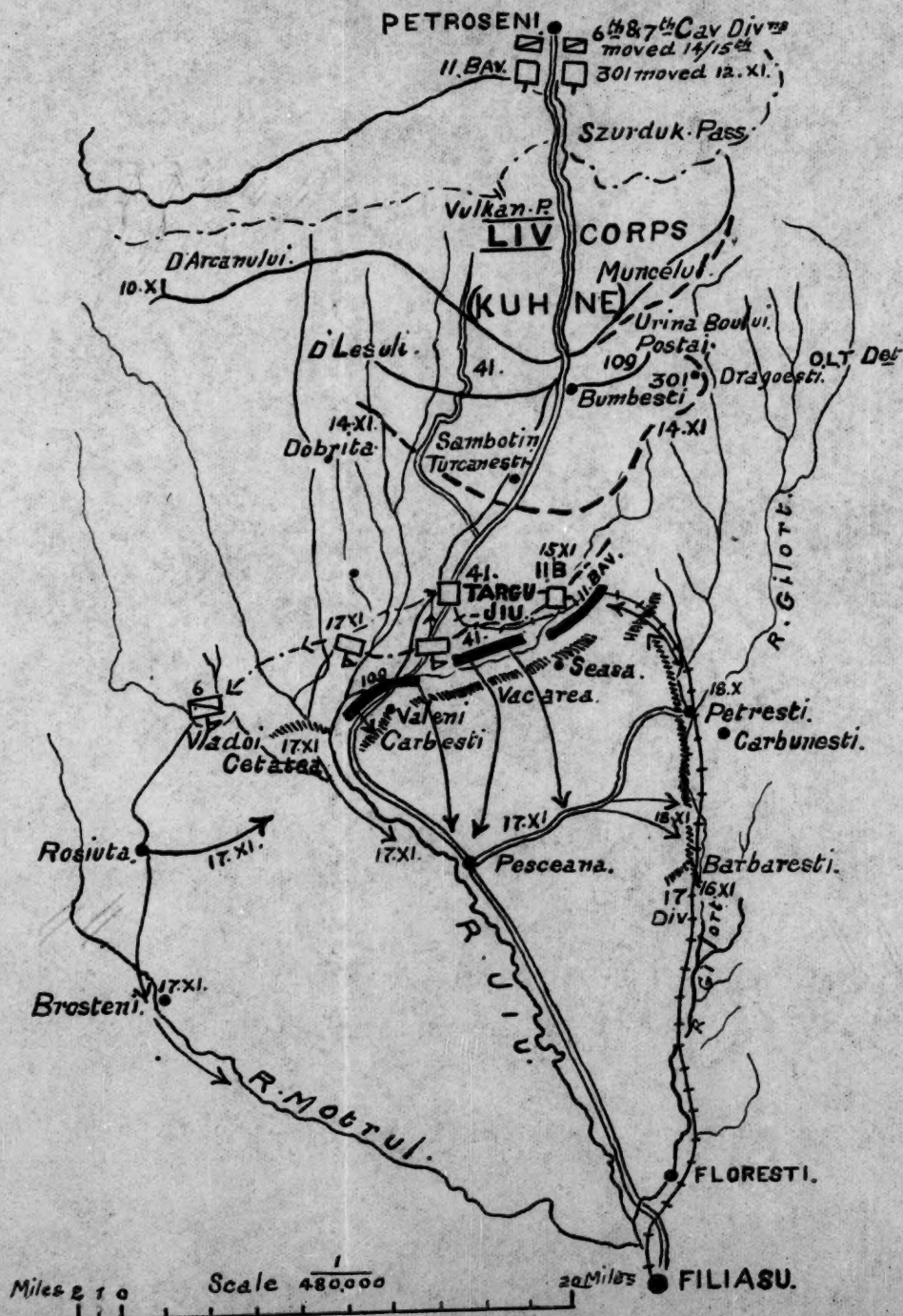
(OCTOBER 23rd-30th)



Map 8

SECOND BATTLE OF TARGU JIU

(NOVEMBER 10th—17th)



Map 9

E'S GROUP AFTER TARGU JIU

MBER 24th ON THE OLT RIVER

SCALE $\frac{1}{1,000,000}$

ENI CURTEA D'ARGES

10

PITESTI (II) REFORMING

9/19

BUCHAREST

2 C.D.

I.C.D.

7 C.D.

6 C.D.

ROSI DE VEDE

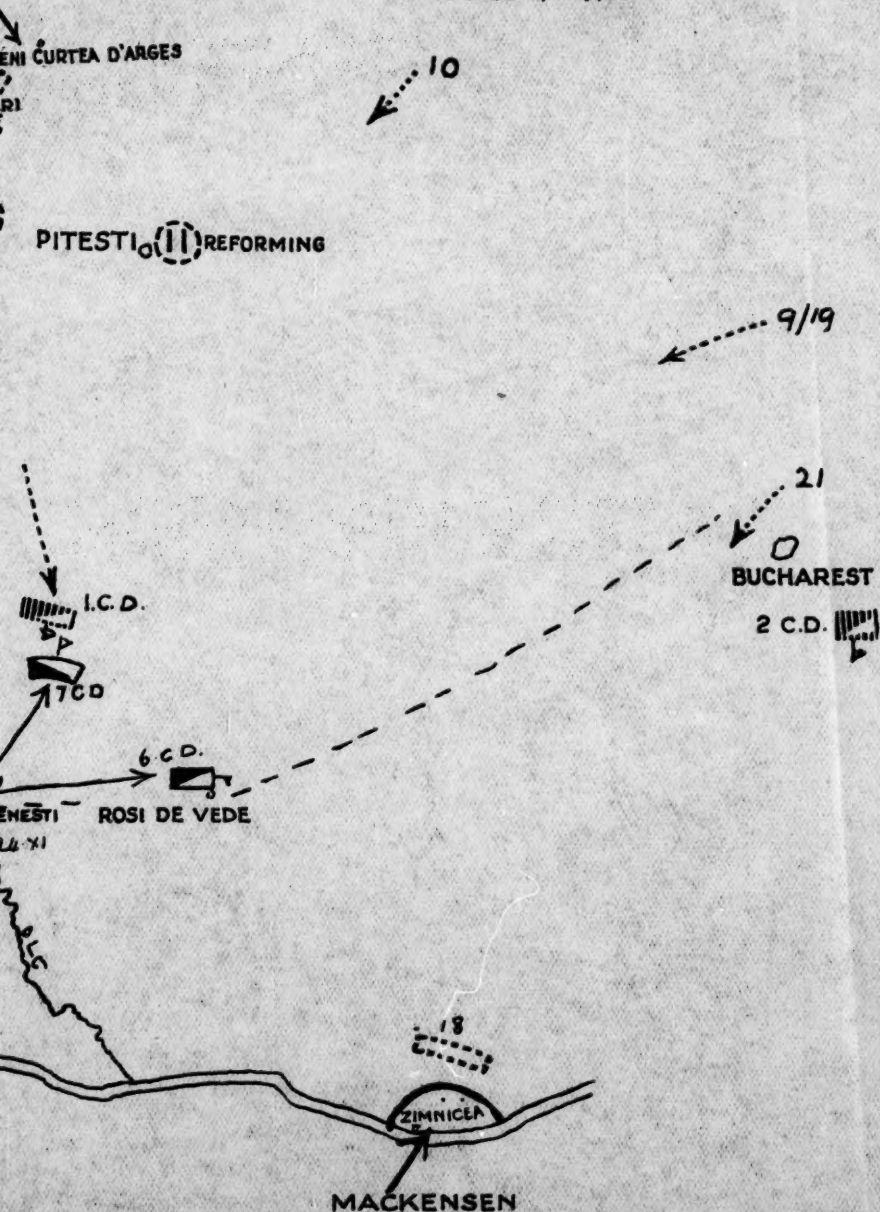
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18

ZIMNICEA

MACKENSEN



TRADE DEFENCE IN WAR.

By VICE-ADMIRAL SIR RICHARD WEBB, K.C.M.G., C.B.

On Wednesday, 22nd October, 1924, at 3 p.m.

ADMIRAL OF THE FLEET SIR DOVETON STURDEE, BART., G.C.B.,
K.C.M.G., C.V.O., LL.D., in the Chair.

THE CHAIRMAN: I have the honour this afternoon of introducing Admiral Sir Richard Webb, who is going to give a lecture on Trade Defence in War. It is just as well that people in this country should know that trade defence in war is of great importance to prevent us being starved if we have to go to war again. I am very happy in the position I occupy to-day of introducing the Admiral, because I was appointed Chief of the War Staff at the Admiralty to join at the end of August, 1914. The international position, however, was getting so critical that my predecessor in office very patriotically saw the First Lord and suggested that I should take up my appointment on the 1st August instead of at the end of August, as he was going to take a sea command. So that on the 1st August I became Chief of the Staff and continued in that position as long as Prince Louis remained at the Admiralty, a matter of some three months. The first thing I had to do, among my duties as Chief of the Staff, was to organise the defence of trade, and I had the most valuable assistance in that respect from our lecturer who was in charge of the Defence of Trade Department. We used to work most of the day together, and every night about midnight we had an official conference on how to defend trade. We slept in our offices at that time, after having just considered the question of the defence of trade.

With those few remarks I have much pleasure in introducing to you the lecturer, Sir Richard Webb, and I am quite sure you will very much enjoy his lecture.

LECTURE.

SIR DOVETON STURDEE, ladies and gentlemen: When I accepted, with considerable diffidence, the invitation with which I had been honoured by this Institution to lecture to you this afternoon on such an important subject as the Defence of the Trade of the Empire in time of war, I was fully alive to the difficult and all embracing nature of my task. It was, therefore, with feelings of great pride and pleasure that I heard the Chair was to be taken by Admiral-of-the-Fleet Sir

Doveton Sturdee who—in addition to his overwhelming victory of the Falkland Islands—a victory which, next to Jutland, probably did more than any other single event of the war to secure the safety of our overseas communications—was also Chief of the Staff at the outbreak of the war and, therefore, my Chief to whom, as Director of the Trade Division of the War Staff, I was directly responsible, and from whom I received such whole-hearted support, advice and assistance in those early and difficult days of the war.

SAILING SHIP DAYS.

Time does not admit of our studying closely the vicissitudes of trade in the old days of sailing ships, interesting and important though that era undoubtedly is.

Up to the time of Charles I. no very hard and fast line existed between the merchantman and the man-of-war; but with the advent of the Commonwealth we find, broadly speaking, five distinct classes of vessel :

1. The man-of-war, whose duty it was to engage the enemy and to protect trade.
2. The hired armed ship, directly under Admiralty control, commanded by naval officers and wearing the colours of men-of-war.
3. The privateer or letter of marque and reprisal, which usually, but not invariably, ceased trading and preyed on enemy commerce.
4. The defensively armed merchant ship, which had its inception in Charles I.'s time, when all vessels were ordered to arm themselves in self-defence.
5. And, finally, the unarmed merchant ship, which usually had a bad time of it from enemy privateers on the one hand, and from compulsory convoy and press-gangs on the other.

But it is interesting to note in passing that "Q" ships seem to have existed in those days. Pennington used them when hunting pirates in 1633; so did Kempthorne and Cochrane in later times; while the French in the West Indies and elsewhere were always on the look-out for "vaisseaux trompeurs"—doubtless with good reason.

THE GREAT WAR.

We now pass to the recent Great War, on which the attack and defence of trade had such a profound influence.

Administrative Measures.—On the outbreak of war, no separate division of the War Staff existed to deal with matters of trade, trade routes, contraband, defensive armament, fisheries, &c., the old Trade Division of the Naval Intelligence Department having been terminated in 1908. Arrangements had, however, been made whereby staff matters directly affecting trade would be dealt with by a branch of the Operations

Division, and it was this branch which was rapidly expanded in August, 1914, to form the Trade Division more or less as it exists to-day.

Touch with Mercantile Marine.—No direct link existed between the Admiralty and the Mercantile Marine, the latter being for administrative purposes under the Board of Trade.

It was, therefore, necessary for the Admiralty to establish direct relations with the Shipping Companies as expeditiously as possible, and for this purpose Lloyds and the War Risk Clubs proved invaluable, and enabled the Admiralty to get into touch with ships and their owners far more quickly than would otherwise have been possible.

War Insurance.—At the same time a policy of war insurance for British merchant ships was adopted by the Government, whereby all British steamships (as distinct from cargoes) could be insured against war—as distinct from marine—risks. 20 per cent. of the risk was taken by the war risk clubs in which ships were entered by their owners, the remaining 80 per cent. being taken by the Government, who were to fix the rates of premium.

It was obligatory on merchant ships so insured to comply with any instructions for their safety issued by the Admiralty from time to time through their representatives at home and abroad.

It is difficult to exaggerate the value of this scheme. Without it ships would, on the outbreak of war, have been compelled by their existing policies to seek shelter in the nearest safe (*i.e.*, Allied or neutral) port. British trade would have been paralysed at the very outset and it would have been difficult to get it re-started.

An insurance scheme for cargoes was also introduced, and, later, we had war insurances for sailing and fishing vessels also.

Officers were appointed as Admiralty Representatives on the War Risk Clubs, while at all the principal commercial ports, Shipping Intelligence Officers were appointed, whose duty it was to convey to mercantile shipping the instructions, route orders and advice necessary to enable vessels to navigate with the least possible danger. Arrangements were also made at ports abroad and at smaller ports at home, so that masters could always receive the latest Admiralty instructions and warnings.

Courses of Instruction.—In order to enable masters and officers of ships to make the best possible defence against enemy attacks, courses of instruction were started at certain naval ports. In these courses, which were much appreciated and fully attended, instruction was given in the latest methods of submarine warfare and how best to combat them.

Courses were also instituted for instruction of mercantile ratings in the handling of guns, methods of look-out, signalling and so forth, while the men who were to perform the more important duties at the guns received special instruction in the gunnery schools.

That these courses were most useful there can be no doubt, and the Admiralty received abundant proof of the excellent spirit which they bred in all concerned, resulting in many well-fought actions and the not infrequent driving off of the enemy.

On the outbreak of war there was no legal compulsion for merchant ships to carry wireless. Moreover, there was a very great shortage of wireless apparatus due to the immense demands by both Navy and Army; but as outfits became available, Orders in Council were issued directing all ships to equip themselves, and a committee was formed to decide which ships were to have priority.

Fisheries.—A word as to the control of fisheries. I make no excuse for introducing this subject in view of the great importance of the fishing industry as a ready means of food supply.

Neither guns nor escorts were available for the protection of these vessels in those early days and their losses were heavy; but, later on, these became available, and more effective protection was possible.

Briefly, the systems adopted were as follows:—

Steam trawlers were brought under direct naval control: the vessels were commissioned and placed under the orders of the various S.N.O.s. Commercially they remained in the hands of their owners, who paid all expenses and took all profits, while their sea movements were controlled by the S.N.O. Vessels sailed, fished and returned in groups of from six to twelve; about one-third were armed and one in each group had wireless. This system worked well; losses were reduced, while the greater latitude of movement thus made possible resulted in considerable increase in the size of the catches.

Drifters.—These vessels follow the great shoals of herring and naturally congregate where the fish are densest; artificial grouping was thus unnecessary. They are practically stationary when fishing and fairly close to the coast: it was, therefore, found sufficient to detail a number of armed Admiralty drifters to escort the vessels to and from the fishing grounds. The loss of drifters thus protected was very slight; this was probably due, in part, to the unwillingness of enemy submarines to risk getting involved in the miles of net laid out by these vessels.

DEFENSIVE ARMAMENT FOR MERCHANT SHIPS.

Prior to the war, as is well known, there was a great shortage of cruisers available for commerce protection—the Admiralty, therefore, decided to re-introduce defensive armament, and a scheme was set on foot to give effect to their decision. As a result of the untiring efforts of Admiral Campbell, the Admiralty representative, and the loyal co-operation of certain shipowners, the outbreak of war found 33 of our large liners armed with two 4.7-in. guns apiece.

We all of us probably remember the great controversy which raged round this question before the War. Germany was loud in her protests,

seeing, as she clearly did, what a blow the measure struck at her own policy of arming merchant vessels on the high seas as commerce raiders.

All our Allies soon followed our example in defensive armament; and all neutral States, except Holland, admitted our contention as to the peaceful character of armed merchant ships, by allowing these ships to trade freely to their ports.

The explanation for Holland's attitude must, as Professor Pearce Higgins has pointed out, be found in policy and expediency and not in law.

None of the defensively armed vessels carried any ammunition in peace time owing to possible difficulty with various port authorities, especially in foreign countries; but immediately war was declared, ammunition was sent out by all available means for the various ships. Depôts were established at convenient ports at home and abroad for the arming of ships, and the armament was placed on board with the least possible delay, usually while the ships were being "turned round." The lack of guns was heart-breaking and supplies, especially in those early days, always lagged sadly behind our requirements. By January, 1917, only 1,420 merchant ships were defensively armed; from then onwards, however, greatly increased supplies became available, and by January, 1918, the number had risen to 4,407.¹

In addition to the gun in the stern we commenced, in 1917, to fit bomb-throwing howitzers forward: these proved very effective when opportunity occurred, but of course the number of howitzers available was very limited.

Smoke apparatus and bow mine-protection gear was also included so far as possible in the equipment of merchant vessels and both proved very effective. *Camouflage* painting also became a prominent feature in every sense of the term.

ROUTES AND CONVOYS.

Broadly speaking, we may divide the war, so far as our present subject is concerned, into two periods: the Routeing Period and the Convoy Period.

Taking, first, the "*Routeing*" Period.

Prior to the outbreak of war, a definite decision had been arrived at that the system of dispersal of trade was to be adopted, as against that of fixed routes.

The latter had its ardent advocates, and might conceivably have answered provided the routes were fully patrolled by cruisers and all ships fitted with wireless. The first condition did not and never will obtain, for the number of vessels required is quite prohibitive. Wireless, too, was very sparingly fitted to merchant vessels, thus preventing the calling up of protection when attacked.

¹ Viscount Jellicoe, "*Crisis of the Naval War*," p. 69.

Dispersal was, therefore, the only alternative, and orders were sent all over the world by every possible channel of information instructing vessels to scatter off the usual routes, to dim their lights, to complete the voyages without bunkering if possible, to make all possible use of neutral territorial waters, and to endeavour to pass through focal points at night.

The more the first or cruiser period of commerce attack progressed the more evident became the advantages of dispersal, provided that dispersal was a wide one. A divergence of, say, 20 miles from the peace route was practically useless. A notable instance was that of the "Möwe's" victims. Nearly all of them were captured on or near the usual tracks. Moreover, some authorities used, when no raider had been heard of for some days, to give out that such and such a route was "safe." The word always sent a cold shiver down my spine. How could any route or area be described as "safe" when a single enemy vessel remained afloat? The use of that word led to the loss of many ships which might otherwise have been afloat to-day.

So the Admiralty brought out a chart of the Atlantic, giving ocean lanes varying in width from 300 to 500 miles, along which vessels were routed, each ship getting a definite and distinct route. No two vessels sailing about the same time got anything like the same route. Then, at last, we got dispersion in the Atlantic really and effectively carried out.

If any smoke or ships were sighted, course was to be altered at once to bring the stranger abeam; if she continued to close, she was to be assumed to be hostile and course further altered to bring her astern.

Terminal Ports.—The terminal ports were, and must always remain, a difficulty. Ships were instructed to sail at dusk and to make an offing at dawn; when making a neutral or unprotected port, the ships were to make land at daylight some distance, say 30 miles, one side or the other of the port and then proceed in territorial waters. Similarly, in leaving they were to strike off from the coast at dusk.

Lights were to be kept ready but not shown except in case of emergency; ships were darkened, and wireless chatting was rigorously prohibited.

By the spring of 1915 the British Navy had succeeded in sweeping the seas of all the enemy ocean raiders: no mean feat when one remembers that in the American Civil War the Confederate raider "Alabama" was at large for 22 months, and frequently had as many as seven Federal cruisers hunting her. Even then she was only caught after entering Cherbourg and emerging to fight the "Kearsage," which had received news of her whereabouts and was waiting for her outside.

SUBMARINE CAMPAIGN.

But by the spring of 1915 the enemy had commenced his submarine attack on commerce; a few raiders issued from the North Sea, but their depredations on the high seas were slight compared with that

inflicted on commerce in the narrow seas and the Mediterranean by submarines.

In those early days the number of vessels available for the protection of merchant vessels in the narrow seas was so small as to be almost negligible. Nor is this surprising when we remember how short we were of destroyers on the outbreak of war. The first claim on destroyers was, of course, that of the Grand Fleet, and yet we find Admiral Jellicoe himself stating¹ that "The number of destroyers we possessed was quite inadequate to form a screen for a Battle Fleet and a Battle Cruiser Squadron which constantly kept the sea." Then there was the very important Harwich Force which guarded the approach to the Dover Straits, provided innumerable escorts and kept unceasing watch on the German coast. The constant passage of troops across the English Channel, again, took a large number of destroyers; the naval ports each had their quota of destroyers for various important services, and all troop transports, both inward and outward, had, of course, to be escorted. Thus it came about that there was nothing like enough destroyers to go round and the Mercantile Marine suffered in consequence.

It was no use, therefore, looking for any very effective measures of protection while destroyers were still so short, and we were compelled to fall back on our own defensive measures, which took two forms—viz., defensive armament and evasion.

Defensive armament I have already fully dealt with. As regards evasion, applying the analogy of ocean routes, the Admiralty decided that dispersion in submarine areas was better than fixed or coastal routes.

Orders were, therefore, issued the effect of which was to keep traffic away from the coast as much as possible, making important landfalls (where submarines generally operated) at dusk, vessels sailing at dusk and arriving about dawn. False colours and disguises were to be used when practicable, and lights reduced to a minimum.

This pushing out of the trade from the coast was a reversal of the previous custom of telling vessels to hug the coast. It was rendered necessary by the great lack of anti-submarine craft, and the inshore route was returned to as soon as patrol craft could be mustered in sufficient force.

Navigation lights were not at first barred, owing to risk of collision; but subsequent experience modified this, and the number of resulting collisions when all lights were extinguished and traffic controlled was almost *nil*.

Zigzagging, when first introduced, was limited to vessels of 10 knots and over. Subsequently this was extended to all vessels, and a series of different zigzags was issued, the cardinal feature of which was irregularity—i.e., a ship never altered course twice through the same arc and no two successive legs were of the same length.

¹ "The Grand Fleet, 1914-16," pp. 17 and 18.

Introduction of "Approach Routes."—Enemy submarines, finding it more and more difficult to tackle vessels close inshore, due to shallow water and the increasing number of patrol vessels, commenced to operate farther afield, and set themselves to attack vessels at some distance from the various focal points, such as the Scillies, the Fastnet and Brow Head.

It therefore became necessary in July, 1916, to bring vessels in and send them out on various "approach routes." These approach routes were fairly broad and were patrolled as far as possible.

Thus the general principle became dispersion up to certain points of concentration on the coast, and thereafter a coastal route to destination, hugging the shore the whole way.

There were five main approach routes, converging on (a) the Butt of Lewis, (b) Tory Island, (c) Fastnet, (d) Scillies, and (e) Ushant, respectively.

These approach routes were made as wide as possible, but were necessarily cone-shaped owing to the vessels having to concentrate on certain definite areas of the coast.

Introduction of "Lines."—The increase in the number of submarines operating off the West Coast led to very severe losses, in spite of constant change of the approach routes, and, as no further manipulations of these routes could be expected to yield better results, it was decided in the summer of 1917 to introduce a policy of lines.

The principle of the lines was a simple one, and consisted in bringing the vessels in or sending them out on a definite patrolled route which was changed every few days. The routes themselves were in the form of large irregular zigzags, so that a watching submarine would have some difficulty in estimating the course made good of an approaching ship which was herself zigzagging.

These lines could not, however, be considered a satisfactory solution, as, although they undoubtedly bothered the submarines considerably, it was still, as in the case of approach routes, a comparatively easy matter for any submarine discovering the landfall to torpedo ships without warning as they passed, in spite of such patrol vessels as it was possible to station there.

The only remaining alternative was convoy, the adoption of which had been constantly and closely considered by the Admiralty. This I will refer to later.

I have made no mention of the Mediterranean, vital though that area was, because the subject has been so fully dealt with by Captain Osborne in his lecture in this theatre on 19th March, entitled "The Anti-Submarine Campaign in the Mediterranean."

Just a word about Allied and neutral vessels and routes in and near home waters.

Allies and Neutrals.—The Allied vessels received the same instructions and advice as British vessels, but neutrals were on a different footing.

They could not receive our secret instructions, nor was it necessary or advisable in the early days that they should do so, seeing that they were working largely in the interests of their own nationals and more or less immune from submarine attentions.

Gradually, however, more and more neutrals came into service for the Allies either under time charter or requisition, and enemy attacks on neutrals very quickly developed. So a series of orders and approach routes for neutrals was devised which worked well on the whole, and gave the masters more confidence in the submarine zones.

But to all and sundry we gave what I call five golden rules :—

1. Avoid usual ocean peace routes.
2. Make coast or port at daybreak on a course approximately at right angles to the coast.
3. Leave coast or port at or shortly after dusk on a course approximately at right angles to the coast (except on bright moonlight nights).
4. Hug the coast whenever possible.
5. Cross dangerous areas, such as the English Channel, by the shortest route and during dark hours.

These rules fairly well embodied the general principles on which we worked. There was nothing in them which the enemy did not know already, and little or no positive information.

Home Waters.—As regards routes in and near Home waters, much might be said about them, but it is hardly worth while taking up your time now. By following the five golden rules, coupled, where possible, with a system of local convoy, all these routes were maintained with less damage than might have been expected. The Dutch route in particular, which supplied us with so much important foodstuffs and enabled us to keep touch with British prisoners of war in Holland, was only made possible by the pluck and nerve of the masters and crews, and by the unwearying support of the Harwich force; an intricate system of convoy under the personal direction of Admiral Tyrwhitt worked admirably, and the service was maintained throughout the War.

Convoy Period.—Glancing now at the second or "convoy" phase of the War, it may naturally be asked why convoy was not adopted long before.

In the early days of the War, when trade was gradually adapting itself to new conditions, and when delays to trade were not so well understood and allowed for as was the case later on, the question of convoys hardly arose.

Again, there was the great and freely expressed reluctance of masters to enter convoy, involving not only great delay, but also the unknown difficulties of station keeping, especially at night and without lights.

But these and other difficulties could have been surmounted, had it not been for the great and crying shortage of escort vessels.

It is unnecessary to labour the point further, but, briefly stated, it was the entry of the United States into the War, coupled with the rapid increase of destroyers, largely due to Lord Fisher's energetic building policy of 1915, which made the adoption of convoy possible.

The whole history of the inception and organisation of the convoy system is so fully set out by Viscount Jellicoe that it would be wasting your time to go into it here at any length.

A first experiment in ocean convoy was tried in May, 1917, with a Gibraltar convoy; this speedily demonstrated its feasibility for merchant ships under modern conditions and the advantages which it afforded.

The growth of the system was necessarily slow, but it was gradually "extended to include most of the homeward Atlantic trade and the trade from Gibraltar." Convoys for Scandinavian and Dutch trade and for the French coal trade had already been in existence for some time; Mediterranean convoys were organised by the C. in C. there, and thus it came about that practically all vessels passing through the submarine area were included in one of the many convoys, slow or fast, which gradually came into being.

In addition to convoy, the introduction and development of depth charges, the laying of huge mine fields across the North Sea, the setting up of hydrophone stations for the detection of enemy submarines, the use of "Q" ships, the co-operation of aircraft both for the attack of submarines and the escort of convoys, these and other methods to which I have already referred all went to assist in reducing the tremendous losses of merchant shipping due to submarine action.

I won't burden you with statistics, but I think three figures will show what an immense change was brought about as the Navy gradually developed its offensive and defensive warfare against submarines.

In April, 1917, when our losses were at their highest, and before we had been able to develop all our resources, the total monthly loss of British tonnage was 545,282. By April, 1918, it had fallen to 215,543, and by September, 1918, the last month before any of Germany's allies had capitulated, to 136,859. That this figure would have been still further reduced had the War continued there can be little doubt.

THE FUTURE.

And now as to the future.

Much will depend on the position and naval strength of the enemy. In the last War England lay like a breakwater across Germany's ports, thus restricting her *guerre de course* and causing her, as reprisal for our blockade, to adopt an intensive submarine campaign.

But with an enemy situated at a distance from our coast, commerce attack on the high seas will again assume foremost place; and we must,

therefore, develop all measures for protection of the great ocean trade routes.

These routes are shown on the chart, but we must remember that they are liable to modification, due not only to the closing of certain markets to us, but also to the position of the enemy bases in regard to those routes.

No such modification, however, can be looked for in the case of the distributing ports of the United Kingdom: each port must supply the population in its vicinity. Take the case of London and the Home counties, with a population of about $9\frac{1}{2}$ million souls. These require every week 89,000 tons of foodstuffs and 26,000 tons of essential raw material. It would take at least a fortnight to transport these amounts to London by road and rail from a west coast port, assuming railways and rolling stock were not required for innumerable other purposes. Moreover, ports can only handle cargo at the quay side and pass it out for transport by road or rail. You cannot reverse the process.

Broadly speaking, we may divide the systems of trade protection into two classes:—

1. Home waters, including North Sea, Baltic and Mediterranean.
2. Ocean routes.

Home Waters themselves comprise by far the largest amount of traffic, being, indeed, the sum of all the trade routes. Their defence against surface and submarine craft and mines in the late War has already been fully dealt with, and the same applies to the defence of fisheries. But the great distributing ports were not seriously threatened in the Great War, as they can only be effectively attacked from the air. We have seen how serious would be the result of any interference with the trade of the ports, and no doubt the enemy would be fully alive to this. His aerial possibilities are many: bombing quays, warehouses and railways; wrecking the docks and sinking the ships in them; sinking vessels in the fairway; laying mines in narrow channels; aerial torpedo attack—the list is a long one. Strenuous countermeasures will be necessary, and anti-aircraft defences of the ports will require to be fully developed if the enemy is situated within aerial range.

North Sea, Baltic and Mediterranean trade will depend largely on whether the enemy possesses or seizes bases in those seas. If so, and assuming they cannot be captured or contained, short-voyage convoys will be necessary as in the late War. Great assistance will be rendered by aircraft in many ways: aerial patrol of the routes; aerial scouting in conjunction with convoy; aerial watch to prevent or detect mine-laying or submarine attack. In the clear air of the Mediterranean the use of aircraft will be even more valuable than round our own fog-bound coasts; but in both Mediterranean and Home waters we shall need them in large numbers, working from their bases and from aircraft and seaplane carriers.

In regard to aerial and submarine attacks on shipping, I do not

forget that these are forbidden by the Washington Conference¹; but that agreement has only been signed by five nations, with the pious hope that others will follow suit, and, any way, we cannot afford to take chances.

Assuming France as an ally, much would be gained, in my personal opinion, by a Channel tunnel. Troops (if required), warlike stores, coal and supplies of all kinds would be transported rapidly, while the mercantile tonnage and number of escort vessels required would be much reduced. During the War, 23,700,000 individual sea-passages were arranged, the majority by cross-Channel voyages, while, towards the end of the War, stores were being transported across the Channel at the rate of over eight million tons a year.

As the tunnel could not deal with all this vast amount, some sea transport would still be necessary, which would form a nucleus for expansion in the event of successful enemy attack on the tunnel.

Ocean Routes.—And now as to the great ocean trade routes of the Atlantic, Eastern and Pacific Oceans.

The question of dispersal of trade as opposed to fixed routes again arises, and I submit that experience shows dispersal is by far the best.

We may assume that the great bulk of our trade will be surface-borne; the idea of immense submersible commerce-carriers seems hardly practical at present; the expense would be prohibitive and the vessels would take some time to construct. They would also be commercially useless when peace was restored.

Cruisers, then, must still constitute the prime factor in the defence of our trade; their limited numbers and the vast areas to be protected will again necessitate their reinforcement by merchant cruisers.

The task of cruisers and merchant cruisers will not be that of a defensive patrol, but rather a constant offensive against any raider reported in their area. For this purpose the best organisation would probably be groups, each consisting of one cruiser with two or more armed merchant cruisers. A group would be loosely extended so as to sweep out any large area in which a raider had been reported, the merchant cruisers being ready to fall back on their cruiser if attacked by superior force. The oilers and colliers accompanying each group could be used as look-outs or decoy vessels with a suitable arrangement of private signals.

The merchant cruisers should carry seaplanes stowed in the well decks forward and aft, hoisted in and out by the cargo derricks.

The most important routes should be patrolled by aircraft-carriers of high speed, suitably escorted; or, failing these, by large airships.

As in the old wars and in the late War, ocean convoy would probably not be resorted to unless absolutely necessary, owing to the great delays it would cause to trade.

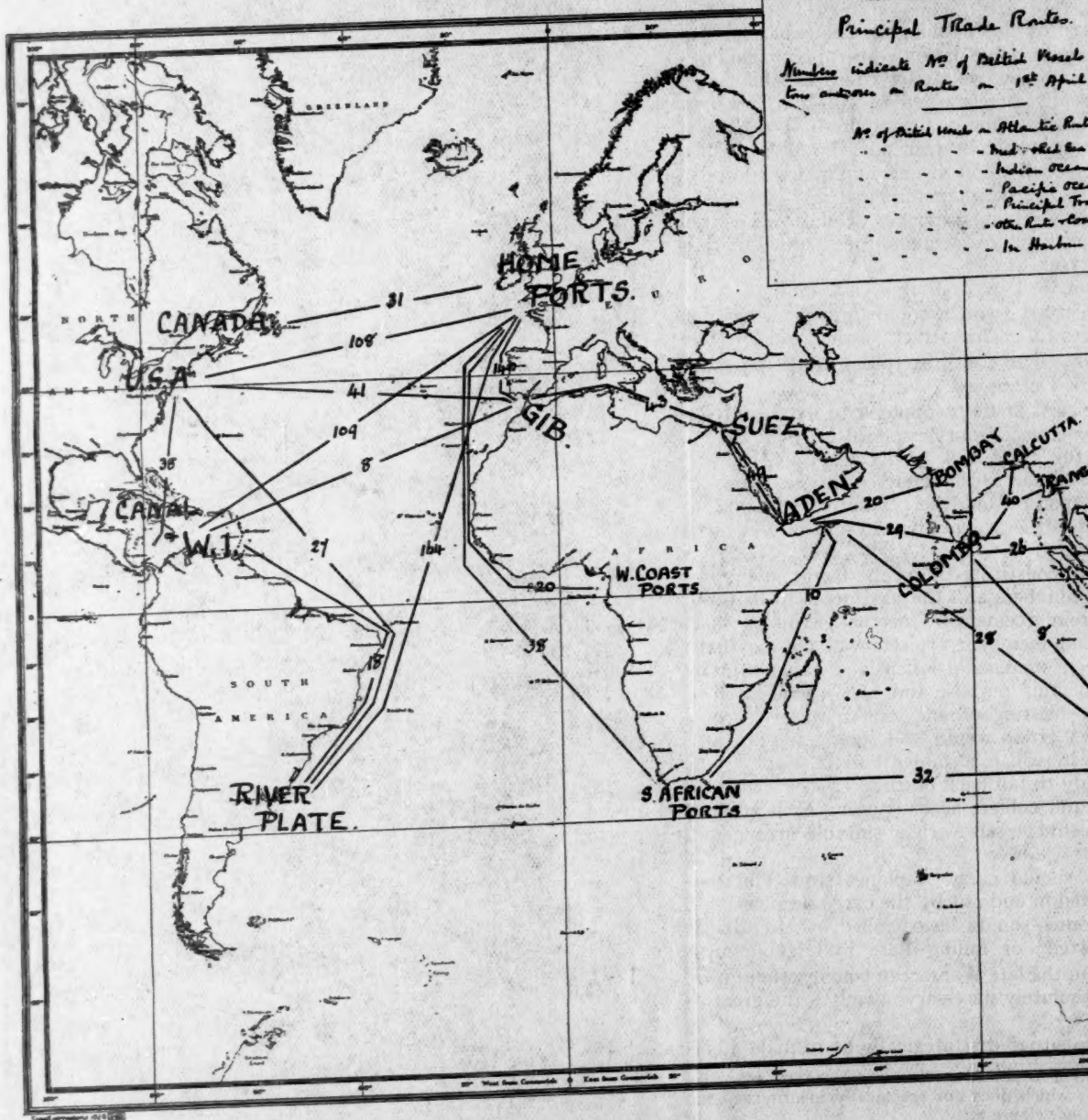
Should the enemy be so situated strategically as to make his *guerre*

¹ "Conference on Limitation of Armaments, Washington, 1921-22." Cd. 1627. Treaty No. 2, Art. 1, clause 1, which does not specifically mention submarines; but is of universal application; *vide* clause 2.

Chart showing Principal Trade Routes.

Numbers indicate No of British Vessels
two centuries a Route on 1st April

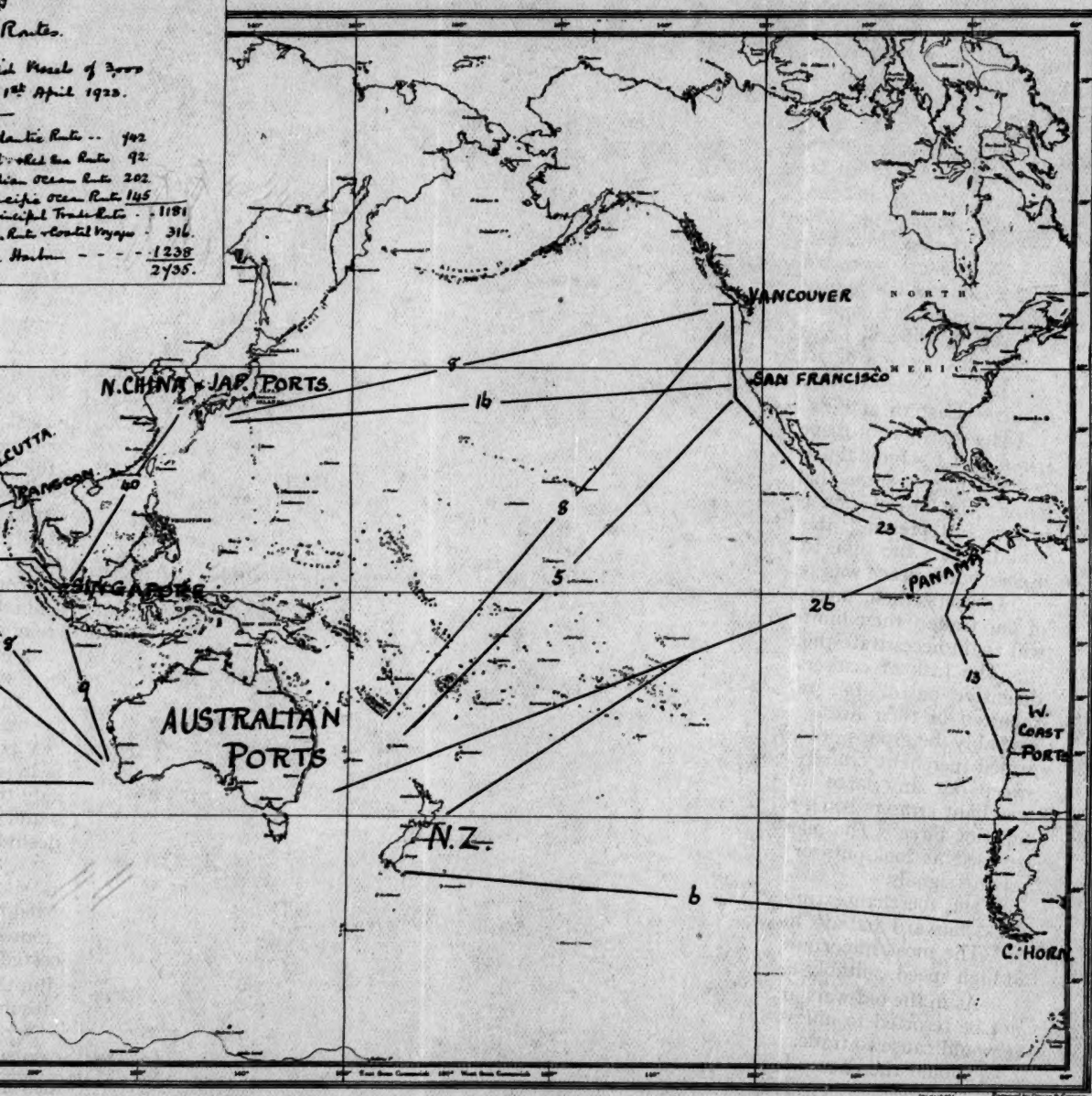
No of British Vessels in Atlantic Route
- West India Sea
- Indian Ocean
- Pacific Ocean
- Principal Trade
- Other Routes
- In Harbour



Routes.

in Month of 3,000
1st April 1923.

Atlantic Route -- 402
 Indian Ocean Route 42
 Indian Ocean Route 202
 Pacific Ocean Route 145
 Indian Ocean Route 1181
 Route - Coastal Voyages 316
 Harbor --- 1238
 2/35.



MAP SUPPLIED BY LECTURER.

de course effective in spite of our cruiser offensive, we must resort to convoy. It is, therefore, necessary to prepare a complete and comprehensive convoy organisation ready to be put into operation at short notice.

The enemy fuelling bases must be searched out and destroyed. The wonderful history of our own 10th cruiser squadron, many ships of which kept the sea for fifty days on end, shows the large radius of action of merchant cruisers; especially in these days of oil fuel, of which such large amounts could be carried.

The disposition of our battle fleet would depend on the whereabouts and movements of the enemy battle fleet. Assuming it is unable, as in the late war, to get at and destroy the enemy, it will watch the latter from as near a base as possible, thereby affording all the support in its power to vessels on those trade routes chiefly threatened by the enemy. Its movements will be limited by the available bases from which it can work, and it seems doubtful whether its normal radius of action could be more than 2,000 miles. Bases at present available are confined to home waters and the Mediterranean.

Vicinity of Ports.—With regard to routes in the vicinity of the ports outside home waters; Nos. 2 and 3 of our "Golden Rules" said: "Make the coast or port at daybreak, and sail at dusk." When this is possible it widens the area round the port through which vessels can pass during dark hours, and it allows for good dispersal. Beyond this area aerial patrols are necessary during daylight. Short distance airships might be suitable and would be reasonably immune from attacks by enemy aircraft. At ports liable to submarine attack hydrophone vessels, etc., should be fitted as in the late war.

Mining by enemy vessels at night is always a possibility, and all merchant vessels must be fitted with bow mine-protection gear. Sweeping must be systematically carried out and courses of approach and departure communicated secretly to ships using the port.

Let us now glance at the oceans a little more in detail.

Atlantic Routes.—In the Atlantic we are struck at once by the great flow of trade along North Atlantic routes. Mr. Fayle has told us¹ of the paralysis of this trade in the early days of the War, due to the mere threat of armed raiders which did not then materialise. This shows very clearly the sensitiveness of this route and the necessity for immediate and reassuring measures for its protection.

Assuming an enemy with an Atlantic littoral, trade both in North and South Atlantic would probably only be able to proceed under very strong convoy, except in the case of fast vessels; but fast vessels are rarely, if ever, large cargo carriers, and most of them would be required as merchant cruisers. The fact that we have no base for capital ships south of Gibraltar might prove awkward, but the vast tracts of ocean are themselves excellent protection, as we found in the last war. Moreover, nearly all South American foodstuffs would come from ports in all likelihood neutral, and therefore not liable to close blockade.

¹ "Seaborne Trade," Vol. 1, p. 106 *et seq.*

**AMOUNTS (IN TONS) of GRAIN and MEAT IMPORTED into GREAT
BRITAIN in 1923; and AMOUNTS HOME-GROWN.**

Country.	Grain.	Meat.
	Tons.	Tons.
Canada - - - - -	2,044,000	47,400
Australia - - - - -	329,800	115,900
New Zealand - - - - -	—	153,300
British East Indies - - - - -	770,600	—
United States - - - - -	2,456,000	245,700
South America - - - - -	2,263,400	642,400
Roumania - - - - -	169,700	—
Scandinavian Countries - - - - -	—	204,800
Other Countries - - - - -	1,048,300	97,700
TOTAL IMPORTED -	9,081,800	1,507,200
TOTAL HOME-GROWN -	6,031,000 (50 per cent. oats)	980,000 (1921-22).

There is always the possibility that the enemy may forcibly seize some advanced base, such as an Icelandic port. Such action would at once lead to major operations by our battle fleet and need not concern us here, except to note that shipping must give it a wide berth until the situation is cleared up.

Eastern and Pacific Routes.—In the Eastern and Pacific Oceans we are faced by a problem as vital as that of the Atlantic, but of a different character. There are many more focal points through which trade in the Eastern Ocean must pass, and therefore many more points of danger to shipping. The question of bases is on a different footing altogether, and the large amount of British coast-line affords the enemy ample choice of a base without infringing neutral territory.

The scattered nature of the trade routes makes a strong and sufficient force of cruisers, merchant cruisers, aircraft-carriers and other vessels most necessary; backed by a force of capital ships if serious attack is likely.

The chart shows how attenuated is the trade on trans-Pacific routes compared to that in the Indian Ocean. It is in that, as Mr. Amery has pointed out, that the importance of Singapore lies as a base for our fleet.¹ We could abandon the trans-Pacific routes without any serious

¹ Parliamentary Debates, 31st July, 1924, p. 2306.

interference to trade, vessels being deflected either across the Indian Ocean or through the Panama Canal as the case might be. But the routes across the Indian Ocean are vital to us, and these routes would be at the mercy of any other Power if such Power should seize Singapore or other central position.

Singapore, situated as it is on the flank of our Eastern trade routes, dominates those routes, and its occupation would provide the navy with a well-placed base of operations for safeguarding our trade.

It would then be possible to maintain a force of capital ships and large aircraft-carriers in Eastern waters ready to back up our cruisers and to forestall any move on the enemy's part to establish a base in or near the Indian Ocean.

At present the nearest base is Malta, a distance of 4,425 miles from Colombo and 6,000 miles from Singapore; but that base would only be possible assuming ships were not too badly damaged to pass through the Suez Canal. A large floating dock at Sydney, coupled with suitable defences against oversea attack, is another possibility; but Sydney is 5,200 miles from Colombo, and therefore too far from the main trade routes to make it suitable either in case of damage or for periodical and very necessary docking.

Even if Hong Kong were not ruled out by the Washington Conference, its distance from the centre of effort is too great to make it of any real value. Failing Singapore, Colombo or Port Darwin are, perhaps, the best alternatives, but neither possesses the fine strategic position of Singapore or its excellent commercial docks.

With regard to the Suez Canal, it will suffice to quote a recent utterance of the Prime Minister on 7th October last: "Absolute certainty that the Suez Canal will remain open in peace as well as in war for the free passage of British ships is the foundation on which the entire defensive strategy of the British Empire rests."

If the enemy were permitted to establish himself in Eastern waters he would have no difficulty in closing the Suez Canal, and there would remain the alternatives of the Cape route and that of Cape Horn. Having established a central base and driven our cruisers off the trade routes, he would probably endeavour to destroy our principal ports and institute a strong patrol or blockade. He would be compelled to keep fairly well concentrated to avoid attack in detail by any of our flying cruiser squadrons, and he would hesitate to operate more than perhaps 2,000 miles from his base.

But, restricted though his movements might be, his presence alone would suffice to paralyse our Eastern trade. A mere trickle might continue, but the United Kingdom would have to face an almost complete cutting off of all Eastern supplies and would have to depend on those from North and South America, and, possibly, North Sea and Mediterranean ports, while our great dominions in Eastern seas would be faced by a still more disastrous situation.

GENERAL CONSIDERATIONS.

Prior to the War, I think, generally speaking, the question of trade defence in war hardly occupied its proper position. We were too much inclined to concentrate our attention on fleet and cruiser actions without following the matter to its logical conclusion, viz., defence of the sea communications of the Empire.

It is a truism to say that the British Empire as it exists to-day finds no counterpart in history. An island kingdom with a teeming and overwhelmingly industrial population, dependent for more than 70 per cent. of her foodstuffs on oversea supplies; those supplies largely available in our own dominions and dependencies which are themselves dependent on oversea trade for their existence: an empire widely spread but knit together by ties of common kinship and allegiance to the Crown; it is not difficult to see how dependent such an empire is upon sea communications, which have been well called its "vital arteries."¹

Is it to be wondered at if those who may one day be called upon to guard those arteries, while wishing all success to the ultimate labours of the League of Nations, feel that nothing must be left to chance a second time?

And we must never forget the immense dependence of the Empire on its Mercantile Marine. Lord Beatty has said² that our powers of resistance to attack are measured in a high degree by the capacity and strength of our Mercantile Marine. He adds the great truth that it is not alone the number of vessels composing our merchant fleet which is so important, but also the hearts of those that man them.

Great though the traditions of the British Navy are, the Mercantile Marine can claim a splendid record also. As Mr. Archibald Hurd points out³: "The Merchant Navy was the defence of the nation's sea interests and its bulwark against invasion before the Royal Navy had any existence; and after the foundation of the Royal Navy it continued to bear no small share in the sea defence of the country."

The type of cruiser for working on the trade routes must combine seaworthiness with high speed, a moderately heavy armament and very great radius of action. This can only be obtained on a fairly large tonnage and consequently numbers must be limited.⁴ It is all the more important, therefore, that close attention should be paid to the best types of merchant vessels suitable for work with the cruisers. Size alone is no great asset; rather the reverse. But, unfortunately (from our present point of view), shipping lines must of necessity build leviathans to enable them to keep up very high speeds in all weathers. We must accept the fact that our merchant cruisers will nearly always have speeds inferior to the cruisers with which they would work, and this must be

¹ "The British Empire," Vol. I, p. 340.

² Lord Rector's Address: Edinburgh University, 28th October, 1920.

³ "The Merchant Navy," Preface, p. vii.

⁴ The Washington Conference limits the tonnage to 10,000 and the calibre of the guns to 8 inches.

taken into consideration by officers commanding squadrons on the trade routes when working out their strategical and tactical plans. In any case, a merchant cruiser can never tackle a fighting ship, designed as such, and her rôle would be much more that of a scout. Now and then, on rare occasions, she might get an opportunity of fighting a raider of her own class, as in the case of the "Carmania" and "Cap Trafalgar" —a fight which, to my mind, has never received the prominence to which the "Carmania's" splendid achievement entitled it.

Only slightly less important than the cruisers themselves are the aircraft which would be associated with them, and also those which would be required to guard our ports.

For anti-aircraft work, for bombing submarines and other offensive operations fighting machines would, of course, be necessary. But there would also be great scope for commercial aircraft in connection with the patrol work in the vicinity of the ports and for scouting purposes along the trade routes so far as their radius of action would allow.

As I have already suggested, seaplanes would be most useful carried in merchant cruisers operating along the trade routes, but probably their numbers are very limited. Even so it should not be difficult, with some structural alterations, to fit small commercial aeroplanes with floats; these would be required for reconnaissance only and not as fighters. In all but very bad weather our large liners could offer a very effective lee for launching and embarking the planes.

As regards airships: it has been suggested that the larger ones might be used to carry cargo, but even an airship of 10,000,000 cubic ft. capacity would only have a disposable lift of 200 tons¹ and this, or a corresponding amount in smaller vessels, would be far better utilised for the carriage of fuel, the ships being employed along the trade routes or for scouting well ahead of convoys, or other similar work.

The smaller airships with limited radius of action would be well employed scouting from such ports as are not themselves defended, but whose hinterland would afford suitable aerodromes well out of gun-range from the sea.

One sometimes hears it suggested that aircraft should be employed for the escort of shipping; this would be a mistake, as it would give away to the enemy the whereabouts and approximate course of the vessels so escorted.

But for use in the manner I have stated aircraft would prove invaluable, always assuming that their *personnel* had been well trained for this very specialised class of air work.

As an example. An observer in an aeroplane on the trade routes would find it difficult to recognise a raider. The latter would doubtless be rigged and marked like a British vessel and would wear British colours. When an aircraft is sighted she would at once alter course to some recognised route. Much training would be necessary to see through the

¹ "Notes on Airships for Commercial Purposes," p. 13.

disguise and the observer should study in peace time the route for which he would be detailed in war.

I do not lose sight of the fact that the call for aircraft in war-time for all manner of services will be loud and insistent. It is no part of this present lecture to decide on the allocation of aircraft any more than it is to go into the question of administration of this important arm for naval purposes, but I wish to make it clear that aircraft of all kinds will be urgently needed in large numbers as a definite and very effective form of commerce protection, with a *personnel* specially trained for this particular work.

Speaking yesterday at Woolwich, Major-General Sir E. Ironside said that the first duty of the Air Force must be to guarantee the safety of fleet bases. I cordially agree and would add that the hardly less important task of safeguarding the great commercial ports also must not be lost sight of.

Defensive armament will no doubt be again adopted. I do not think Admiral Campbell's original plan can be improved on, viz., two guns (6-in. if possible) mounted right aft, coupled, if possible, with an anti-aircraft gun. The Washington Conference makes no stipulations on this head, and the matter of stiffening the ships and constructing magazines is one between the Admiralty and the shipowners.

I understand that the War Risk Insurance scheme has not yet been sanctioned as a war measure.¹ It seems highly desirable that this should be done so as to remove all uncertainty in case of a sudden outbreak of war.

It may not be possible to institute courses of instruction for officers and men of the Mercantile Marine in peace time, but much can be done by close personal touch between officers of the two great sea services, especially when meeting at ports abroad and by occasional lectures at mercantile home ports.

Staff organisation in peace time should be such as to allow of rapid and complete expansion for war purposes. Wherever possible full advantage should be taken of existing commercial organisations. Lloyds and the War Risks Clubs are strong examples of this in the last war. Close touch is necessary between the Admiralty and shipowners. The appointment and invaluable advice and criticism of the late Sir Arthur Ritson as a link between the Admiralty War Staff and the shipping community is one which might well be repeated in war time.

In framing orders and instructions to the Mercantile Marine the closest consideration must be given to the possibilities and limitations of the sister sea service. There is no limit to their loyalty and enthusiastic co-operation, but they must not be asked to perform impossibilities.

In conclusion: the whole object of effective defence of trade in war is to ensure a steady and uninterrupted flow of shipping and therefore of supplies. Tonnage must be employed only on absolutely essential services, and, wherever feasible and consistent with safety of the routes, supplies near at hand should be obtained in preference to those from

¹ Annual Report of Liverpool Steamship Owners' Association, 1923.

more distant countries. Port congestion must be avoided by all possible means and ships turned round without any avoidable delay. If possible the whole administration of sea-borne trade in war time should be under one head, which would control not only protection but also transport, allocation of shipping and all matters in connection therewith.

That concludes my lecture, which I might perhaps have better called "Some Aspects of Trade Defence." The whole subject is so vast that it would require much more time to cover all points; but I have endeavoured to bring out what I consider some of the more important ones in the light of the great experience which we gained in the late war.

DISCUSSION.

CAPTAIN SELWYN M. DAY, R.N.R.: Ladies and Gentlemen, I welcome the lecturer's suggestion that at lectures and similar functions the two Services should exchange opinions to the mutual advantage, I take it, of both of them. I take this opportunity, therefore, to put before you a point of view which I think is deserving of some consideration in dealing with such an important question as that of trade defence. The weakest link in the organisation during the late war was the lack of direct *liaison* between the Admiralty and the *personnel* of the Mercantile Marine. The merchant fleet has to realise the defence scheme whatever it may be, and it has to realise that through the individual shipmasters. It is to them that the rules and regulations are issued and it is they who suffer the pains and penalties if these are not carried out. The Admiralty, however, does not deal directly with the *personnel* of the Mercantile Marine, with the shipmasters, so that the latter do not receive instructions in the same way as Naval captains. The Admiralty deals with us through the Marine Department of the Board of Trade. Now, perhaps there is no body which is a less nautical body than the Marine Department of the Board of Trade. I do not want to introduce any controversial matter in this discussion, but if you look at their constitution you will find there is not a nautical name among them. If there is a nautical man on that body his qualification as such is that he was at sea 20 or 30 or possibly 40 years ago, so that they are obviously not up to date. That has a direct and important bearing on the subject from our point of view.

In 1914 the Admiralty issued certain recommendations to the Mercantile Marine, and those same recommendations were issued as orders to Naval vessels. They were precautions against submarine attack and were to the effect that every ship should be completely darkened—not excepting even navigation lights, which should be switched on only to avoid collision—and also that ships should steer a zigzag course in daylight. These precautions were instantaneously and easily realisable by all and any ship. From that time every man-of-war was so thoroughly darkened that during fog, mist and night-time you could not see her at all at a few ship's lengths off, and she was safe. But how did the merchant ship fare? Did the Board of Trade pass on this recommendation from the Admiralty to the shipmaster and say: "You are also to have this cap of invisibility"? No. They left it to the option of the master to take the risk. If he extinguished his lights at night-time and sailed in a completely darkened ship, an accident might occur and he would be called upon by the Board of Trade to explain why he had not carried out the international regulations, and perhaps he would be called upon by his owner to explain why he had invalidated his insurance contract. For some time

shipmasters carried on under those conditions expecting that an order would be issued. On the 16th March they addressed, through the Mercantile Marine Service Association, an official communication to the Admiralty requesting that that responsibility should be taken off their shoulders—that they should not be compelled to sail with lights when they were the easiest possible prey for submarines, and that they should not, if they darkened their ships, have to stand the onus of proving that it was necessary to darken their ships and that any collision that thereby resulted was beyond their control. The Marine Department of the Board of Trade refused to give us that security; and I venture to say that more than half the number of ships that were lost in the April quarter, 1916, when over 1½ million tons of vessels were sent to the bottom and 10·73 ships were lost each day, were sunk at night-time when the ships were showing lights; and throughout the daylight they were not zigzagging as they should have been. At this date, however, as I can foresee no comprehension by the Authorities of the professional view, I consider it a duty to place this much on record.

PAYMASTER-COMMANDER H. B. TUFFILL, R.N.R.: It is with much diffidence that I rise to make a few remarks on this important subject. I should like to say that I was very glad to hear Admiral Webb state that in the unhappy event of hostilities occurring in the future it will probably be necessary to introduce the Convoy system. I do know that shipowners would welcome the convoy system rather than the spreading of their ships over the ocean, for the actual result of the former when properly organised means less delay to tonnage and more regular sailings. But the point I know the shipowners would emphasise is that the Admiralty, or whatever body they may derogate their authority to, should evolve a system of convoys and leave it to the shipowners to work out the details. Shipowners will put up the ships at the required time and place when the convoy is scheduled to assemble.

There is one other point I would like to make if I am allowed to do so. During the late war we had to maintain only the imports of the country. Our exports were reduced practically to nil so far as our commerce was concerned. We were exporting only foodstuffs for the rationing of practically the whole of Europe, and munitions of every description to the Armies in the field. But in doing so we very nearly strangled the commerce of our own Empire, and we pledged our credit *up to the hilt*—indeed, I believe some people would go so far as to say that we overdraw our credit. The result of all is that for at least fifty years from now we shall have the hardest possible task to build up our credit again. If by any unfortunate occurrence war of any magnitude breaks out again, it will be absolutely essential that commerce be maintained, not only imports but also exports. We must, of course, maintain our imports of food and essential raw materials or we shall soon starve; it is not enough to bring in foodstuffs alone, we must have the raw materials for the people to work on, and so earn money to buy the food. To obtain these essential imports from overseas with our diminished credit, it will be absolutely necessary to maintain our commerce and export our manufactures, and in every way keep the outward flow of trade going to the full, or we shall be unable to pay our way, and our overseas Dominions will not be able alone to keep us fully supplied with our requirement of essentials and we must trade with the other nations.

CAPTAIN E. ALTHAM: There are one or two aspects of the problem to which Admiral Webb has drawn our attention which are perhaps deserving of a little elaboration. In the course of his lecture he alluded to the Washington Treaty containing an agreement between certain nations that there should be no air

attacks on shipping. I have studied the Washington Treaty fairly carefully lately, and I cannot find any exact phrase in any Article which lays that down. As a matter of fact, the Treaty altogether leaves out the question of air attack on shipping. True it *does* re-affirm the general principle that merchant ships are not to be sunk until their crews and passengers are put in a place of safety; but the whole trend of this particular Article relates to submarines and not to aircraft. In point of fact a Committee of Jurists has been sitting at the Hague and their report was published about three months ago I think: it can be bought as a White Paper at the Stationery Office. That Committee of Jurists has been trying to formulate rules for air warfare generally; and in accordance with the decisions at which they arrived they have laid down what are to be and what are not to be legitimate targets for bombing and other forms of aerial attack. They have tried to ring round cities and safeguard civilian life from danger; but they have laid down quite clearly that military communications, in the broad sense of the word "military," are to be legitimate objects for attack. Of course the proposals of this Committee of Jurists have not yet become International agreements; but if their definitions are accepted in principle and you may bomb trains, motor transport and so on which are conveying munitions of war to armies in the field, it is extremely likely that our enemies would consider it illogical to refrain from bombing shipping which is conveying munitions of war by sea.

If you once admit that air attack is to be permissible against sea communications, how are aircraft going to distinguish between ships conveying munitions of war and ships conveying foodstuffs or passengers? I cannot conceive our shipping steaming up the Channel being immune from air attack if we were at war with a Continental nation which was not a great sea Power but which had a considerable air force within striking distance. I think, therefore, that is a form of attack which we shall have to take very stringent measures to counter if our sea communications are to be safe in war. In the next place, Admiral Webb alluded to the possible use of seaplanes in connection with cruiser groups guarding the ocean routes. I suggest that at present seaplanes would often have great difficulty in operating on the ocean routes on account of the difficulty they experience in getting off the water except in a flat calm. Possibly a solution will be found in fitting merchant cruisers with catapults for launching aircraft. Then with regard to airships, the recent performances of R34 and ZR3 are a very strong indication of the development of the lighter-than-air craft for long ocean voyages. Before long, therefore, we may hope to have airships of sufficient endurance to patrol the ocean routes. But there are two points in connection with them which are of importance. One is that the radius of action of an airship is to a certain extent dependent on the number and position of the mooring masts provided for them. These mooring-masts seem to be likely, at present, to be confined to the permanent mooring-masts, and here and there a big airship shed provided for commercial routes. But if airships are to be of value to the Navy they must have mobile bases. The United States Navy has fitted out a ship with a mooring-mast and has carried out successful trials with it and the airship "Shenandoah." This, I suggest, will be a new and essential form of naval auxiliary unit, for the Navy may require such airship bases right out on the sea routes far distant from the normal commercial air routes. Another point connected with airships is that there are great possibilities of their being developed into aeroplane-carriers. A United States airship has already succeeded in releasing and picking up aeroplanes, and I suggest that this system may help to enlarge the radius of action both of the airship and of the cruiser groups for protecting shipping.

COMMANDER H. M. ROBSON, R.N.: There is one point that I should like to raise, namely, the value of speed as a form of defence, especially in merchant ships. Anyone who had anything to do with the convoy system during the late War realised the very great hindrance of the slow, say, 6 or 7 knot, convoy. In preparing for future wars it appears to me that good might be done if one could impress on shipowners the great value of speed as a means of defence for the ordinary tramp. If you increase the speed of tramps, even slightly, to provide a greater measure of safety, you also increase their output, because they would be able to make more voyages in a given time, so that from the shipowner's point of view it might possibly be a paying proposition.

ADMIRAL SIR REGINALD G. O. TUPPER, G.B.E., K.C.B., C.V.O.: Mr. Chairman, Ladies and Gentlemen, There is one question I should like to ask the lecturer and hope he will be able to answer, if it is not too confidential. What are the arrangements at the Admiralty at the present time with regard to the subject under discussion? Does the War Trade Department or any special department deal with the general question of the employment of the ships' and the officers and men of the Merchant Navy in wartime? Just before the Armistice I happened to be chairman to finish up a committee on the Mercantile Marine generally, and one of our recommendations was that there should be a department at the Admiralty in which there should be several shipmasters, which would deal with all questions connected with the co-operation of the Merchant Navy and the Royal Navy in wartime so that we should always have in peace time cut and dried ideas, regulations, and organisations for immediately expanding the Navy, with the adjunct of the whole Mercantile Marine, in times of war. There would thus be in existence regulations as to convoys, orders as to navigation lights, and everything else connected with merchant ships, and these regulations and orders would be constantly under review. Soon after the Armistice I went to another appointment, but, so far as I am aware, I believe the whole of our recommendations were then relegated to the waste-paper basket. I do not know, but I believe the Board of Trade resumed entire control of Mercantile Marine as in pre-War days. Is there now a department at the Admiralty which does study the question of co-operation between the Merchant Navy and the Royal Navy, and profit by all we learned during the last War in the work we did together?

What Captain Day mentioned about navigation lights not being shown by merchant vessels at night during wartime, presents difficulties. If ever any vessel of the 10th Cruiser Squadron came across a merchant ship not displaying navigation lights, she was at once suspected and always sent in under a strong armed guard for minute examination by Customs; whereas vessels showing navigation lights were often allowed to proceed if their papers were correct and no contraband goods were found by the examination officer and his staff on the high seas.

CAPTAIN SIR D. WILSON BARKER: Admiral Tupper has called me up on my feet because he made a remark which has a very important bearing on the subject of the lecture this afternoon. I think it is a matter of vital importance that the officers of the Mercantile Marine should co-operate very closely with those of the Navy on this subject, and I am delighted to hear that there is some possibility of that being done, because in another direction I have advocated the same thing myself at the Naval College many years ago and at a recent date. The merchant service officer can often give the naval officer some very interesting information about the organisation of the mercantile marine. While the naval reserve officer can go on board a man-of-war and obtain all the information possible, it would

be a very good thing if the naval officer could occasionally exchange positions with officers in the Mercantile Marine and obtain practical experience in that way.

VICE-ADMIRAL SIR RICHARD WEBB, K.C.M.G., C.B., in reply said: I have not very much to say in reply to the remarks that have been made in the course of the discussion. I will divide them into three heads, firstly, co-operation between the Mercantile Marine and the Royal Navy; secondly, the carriage of foodstuffs, exports and imports; and thirdly, the question of aircraft. As regards the question of co-operation between the Mercantile Marine and the Royal Navy, there is no doubt about it that before the War, at any rate, the touch between the Navy and the Mercantile Marine was not as close as it might have been; and I am rather afraid that, closely though we and our brother seamen drew together during the War, there are signs that we are again drifting apart. This should not be, and this would not be if we were all under the same head. We want above all things to remember that we are all seamen. Personally, it has always been my opinion (I know it is an unpopular opinion and one that would not carry weight) that there ought to be a common entry for the sea; that all the boys who are going to be sea officers ought to go to the same training ship, and from there it ought to be decided whether they are to go to a liner or a tramp or a man-of-war as the case may be. I know that is an unpopular idea, so I will not pursue the subject further; but I do think that when we are at sea we ought, as several speakers have pointed out, to improve the shining hour more than we do. What is wanted is for the officers to go on board one another's ships as several speakers have said; not only for the mercantile officers to go on board the men-of-war, but for the officers of the Royal Navy to go on board the ships of the Mercantile Marine and to appreciate the possibilities and the limitations of the Mercantile Marine. Our first ground for recruiting is the Royal Naval Reserve. What they meant to us in the War only seamen know, and what they will mean to us in the next war only seamen know. As regards the Board of Trade, I should like to read to you the following paragraphs which I was obliged to omit when reading the lecture, together with many others, because the lecture was too long:—

"Strictly speaking, of course, the Admiralty were in no way authorised to issue any orders to merchant ships, who owed allegiance to their owners or charterers and to their official department, the Board of Trade. This raised, and still constitutes to my mind, a very serious bar to the efficient working of any system of trade defence. It is difficult for the Admiralty to afford protection to, and work in close conjunction with, an important force like the Mercantile Marine unless granted the necessary jurisdiction. It is somewhat like the establishment of martial law in a town or district where the inhabitants are not under the orders of the military authorities.

"As a result, Admiralty directions first took the form of 'Advice'; a poor substitute at best, and one which was unfair to both the owner and master."

With regard to what Paymaster-Commander Tuffill said about exports and imports, I agree that exports are very important indeed; but you must remember that exports are of no good if we are starving. We must get food into the country. That is the first and primary consideration. I will not say of the Navy, but of the authority in England, call it what you will, that directs the sea communications of the Empire. That must be its first consideration—to see that everything necessary for the keeping going of our islands and of our Empire is allowed to pass into this country. With regard to the difficulty of getting the seaplane off the water in rough weather: this might be met to some extent by giving a good broadside lee, together with a liberal application of oil.

THE CHAIRMAN (Admiral-of-the-Fleet Sir Doveton Sturdee, Bart., G.C.B., K.C.M.G., C.V.O., LL.D.): Ladies and Gentlemen, I feel sure that you would like to join with me in thanking the lecturer for a most interesting lecture on a very important subject. There were two or three points that he particularly brought out that I should like to mention. One was the shortage of cruisers and of destroyers in 1914. In 1924 we are still short of them, but do we care? One political party gets up and says that we are starting a competition in building warships among the nations because we are building five cruisers, although we have destroyed over 40 of them. If the people of this country do not care and do not fear starvation, perhaps it does not matter; but if they do fear starvation or any other trouble of that kind they had better build cruisers, or starvation will ensue. The lecturer has referred to the enormous weight of the food that is imported into this country. A question was raised about the War Risk Insurance policy. Is not that still in existence?

SIR RICHARD WEBB: I gather not.

THE CHAIRMAN: That is an important and interesting subject to me, because one of my first duties, two or three days before the War, was to deal with it. For two years the authorities had been trying to produce a war insurance policy in consultation with the heads of the shipping firms, because the policy of the latter was that if a war insurance policy was not introduced all their ships would go to the first neutral port on the outbreak of war. I had a chance of impressing that point on our Cabinet Ministers, and a war insurance policy was brought out. Let us trust it is in existence now, otherwise there would be the same trouble in the next war and starvation would ensue in the first weeks of the war. The question of the convoy system is a very difficult one, because it means training. If we are going to work an efficient convoy system, which we would like to see, we must have some system of training for officers during peace time. With regard to the question of increasing the speed of ships, it must be remembered that it is very expensive to have high speed cargo ships. I quite agree that it would be a good thing if we could have them, but it is a question of economics which we cannot get over. With regard to the point raised by the lecturer of the connection between the Royal Naval Officer and the R.N.R. officer afloat, that is a very excellent idea, but we are only individuals and it is between the firms that something of that sort must be done. I understand that one of the speakers said that the Board of Trade Department knew nothing about the sea. It is unfortunate if that is true. The policy at headquarters is to encourage Naval officers and Merchant Service officers to meet abroad in order that they may know what is going to happen in the case of any sudden outbreak of hostilities. As a Service we want peace; we are the Pacifists of the world. But my experience, from reading history, is this, that if peace is desired, we must not be so weak that any country can threaten our people with starvation and annihilation. Therefore, take the ordinary precautions of having sufficient force to prevent that happening. The Washington Treaty has been signed by a few nations, but other nations have not yet signed it. I read the papers, and I see there is war going on in different parts of the world; I see there are strike troubles in other parts of the world. There does not seem to be a peaceful policy existing in the minds of people. Therefore, we cannot expect that peace will ensue until we have altered the spirit of humanity to prevent war. We have a police force in the Metropolis to keep order and regulate the traffic. In the same way we want a navy to regulate the sea traffic and make sure that we cannot be attacked. This is an easy country to attack, because our communications are across the seas, and the fact that we have

such a number of merchant ships makes it a great problem how to defend ourselves if any nation wishes to attack us suddenly by sea or by air. Therefore, let us all pray for peace, but take the ordinary precautions of having a police force in order that we may ensure peace; and then I am quite sure nobody will be happier than naval, military or air officers.

Ladies and Gentlemen, I am sure you all desire to thank Sir Richard Webb very much for his excellent lecture.

The vote of thanks was carried by acclamation.

ADMIRAL SIR REGINALD CUSTANCE: Ladies and Gentlemen, I am sure you will not wish to separate without passing a vote of thanks to the Chairman for presiding over the meeting to-day and for his interesting speech. I think you will also wish to congratulate him on being in the Chair when such a good paper was read and the discussion was at such a high level. I have never heard in this theatre speeches so much to the point; every speaker made a good point. I am delighted to be able to propose a vote of thanks to the Chairman. He is a very old friend of mine, who always has the public interests at heart.

The resolution of thanks was carried by acclamation.

THE CHAIRMAN: Thank you very much. I have served under Sir Reginald Custance in many capacities, both ashore and afloat, and I am very much obliged to him. He is helping in many ways in regard to Service matters. Some of the articles he has written on those subjects are most well worth studying, and I hope that the politicians, who are supposed to be the guides of the country, will read them.

The meeting then terminated.

OLD MILITARY CUSTOMS STILL EXTANT.

By MAJOR C. T. TOMES, D.S.O., M.C.

On Wednesday, 5th November, 1924, at 3 p.m.

THE HON. J. W. FORTESCUE, C.V.O., in the Chair.

THE CHAIRMAN: Ladies and Gentlemen, I have to introduce to you our lecturer, Major Tomes, who has devoted much study to some of the more curious details of military procedure, matters which have become formal, but extremely interesting. It is most desirable that the private soldier should know that these have a meaning, and are not mere idleness. I will now call upon Major Tomes to deliver his lecture.

LECTURE.

IT is a comparatively easy matter to arouse interest in the tactical side of the duties of the soldier, but there are certain conventional functions connected with salutes, guards, ceremonial rifle exercises and the like which are not calculated to fill him with enthusiasm. If, therefore, the origins and meaning of some of these customs and of our more curious military expressions were explained to the troops, it might render their instruction easier and stimulate interest in their performance.

Let us first consider the *Salute* in all its forms. It may be said that the salute is a symbol of submission to a superior and readiness to carry out his orders. The soldier's salute with the hand may seem to be a conventional gesture designed to enhance the importance of the commissioned officer, yet the movement can become invested with life and interest. One theory maintains it has been the custom from the earliest times to stand uncovered in the presence of a superior: so, too, the soldier in the presence of his officer. To this day, in the Guards—be it noted—men remove their caps when in fatigue dress instead of saluting. In the seventeenth century an officer took off his hat with a flourish when marching past. A book called "The New Art of War," printed in 1740, states "when the King or Captain-General are to be saluted each officer is to time his salute so as to pull off his hat when the person he salutes is almost opposite to him."

Another, and perhaps truer, tradition holds that both the salute and its return were tokens of mutual trust and respect; so, when two knights in armour met, they both uncovered their heads, or raised their vizors, thus placing themselves in each other's power. But iron casques,

shakos, bearskins and the like are not easy to remove, so there came to be introduced the convention of the preliminary movement only. The hand was raised to the helmet and no more. The hand kept open with the palm to the front is a comparatively recent innovation, and may be taken to be a relic of the greeting of prehistoric times; it denotes that nothing is concealed which might be used as a missile. An integral part of the modern salute is to turn the head and eyes towards the officer saluted. In mediæval days no serf was allowed to raise his eyes or look in the direction of his lord. He was expected to slink to the side of the path and avert his face when that privileged being passed by. The soldier, the man-at-arms, was no serf, but a free man and as such had every right to look his superior straight between the eyes.

So the present day salute is derived: it is a symbol of greeting, of mutual trust and confidence, initiated by the junior in rank, but with no loss of dignity on either side.

The *Officer's Salute with the Sword* is full of interest. The first motion, the recover, is a relic of the days when the Crusader kissed the Cross before engaging in combat, the Cross being the hilt of the sword. The second motion is a symbol of trust in that the guard is lowered. In the recover the symbolic kissing of the Cross is again performed. In the seventeenth century officers used to carry short pikes or halberts and the salute during a march past was marked by many a graceful turn and flourish; the present officer's salute with the sword on the march is probably a relic of that custom.

In the "*Present Arms*" with the rifle, the weapon is held in such a way as to be harmless, and is even held out in token of submission. The salute when at the "Slope" or "Shoulder" by touching the rifle with the disengaged hand is the first motion of the "Present." A sentry's salute to a Field Officer differs from that to one of lower rank: the former is entitled to the full salute, while the latter receives the preliminary movement only. Is it too far fetched to suggest that sentries do not "Present" after dark because, once upon a time, it was too dangerous owing to the difficulty of distinguishing between friend and foe in the dark.

This convention of holding the weapon so that it cannot be used is universal and very old. The Arab of the Sahara grasps his spear with the point on the ground and trails it. The Crusader offered his sword, hilt foremost, to be touched by his Sovereign before going out to war. Even the Tanks, who carry their machine guns pointing skyward during a march past, point them to the earth on passing the saluting base.

Royalty and officers of high rank are *saluted by firing* a number of guns. This custom dates from the time when it required a considerable time to reload a gun. The shotted charges were fired away and the ship or battery was consequently defenceless and in the power of the individual to whom it was desired to pay honour.

Ships salute by dipping the ensign, this being a relic of the days

of sailing ships when a sail was lowered to reduce speed. The ship thereby allowed herself to be overhauled as a token of submission.

Many of the *Duties of a Sentry* may appear somewhat futile. Thus the guard has to "Turn Out" to the orderly officer, the Field Officer of the day, to all armed parties, at Réveille, Retreat and Tattoo. To understand these conventions it is necessary to go back a good many years. In mediæval days the Guard on the gate would turn out on the approach of any armed party as a precaution against surprise. This fact is mentioned in the "New Art of War" and again in "The Military Guide for Young Officers," printed in 1781, where it is said: "When a detachment or a number of armed men enter the town, the officer of the Port Guard is to have his men under arms; and if it is a detachment commanded by an officer, the men of the Port Guard are to rest ['rest' = present] their arms, the drummer beat and the fifer play a march, provided the party which enters beats a march; but if it is only a sergeant's party, the guard is to remain shouldered and the officers at the head of it, without his espontoon in his hand. This may be looked upon as too great a compliment from an officer's guard to a sergeant's party, but they must know that it was not done by way of respect to those who enter but for the security of the town; lest the enemy having forged or procured a route or order, should send such a party to seize the gate while his body lay concealed at some little distance in readiness to advance on the first signal.

"When a fire breaks out in a garrison the officers of the Port Guards are to put the men immediately under arms, order the barriers to be shut, the drawbridges drawn up and keep them so till the fire is extinguished. This precaution is absolutely necessary in a frontier garrison for a town might easily be surprised if their gates were left open on such an occasion, it being natural for everybody to run to that part which is flaming." In such times it must have been very necessary that the sentry should always be alert and the men of the guard ready to man their posts at short notice. An officer would visit the sentry at intervals and no doubt would order frequent practice alarms. So these customs persist.

In all former wars, and, indeed, in the late war, troops stood to arms at dawn and dusk, both being likely moments for attack. In olden times similar precautions were taken and the custom has survived, so now the guard is turned out at Réveille and Retreat. The guard is also turned out at "Tattoo," but this is probably of later origin. It must be remembered, firstly, that the Quarter Guard was really a guard over quarters and faced inwards, ready to quell any disturbance within camp or bivouac, and, secondly, what may be the derivation of the word "Tattoo." The latter comes from the old Dutch *Tap toe*, meaning the time to close the taps or taverns. At a certain hour the drummers marched from post to post in the town beating their drums; "First Post" would be the signal of their having taken their place to commence their round, while "Last Post" would be sounded when

they reached the end of the round. In those drunken days there was a prospect of the camp being filled with soldiers in various stages of intoxication, so the guard was turned out as a precaution against trouble.

Ceremonial Drill is not merely a collection of movements designed for the improvement of discipline and to test the steadiness of the men in the ranks. Our modern "Infantry Training" deserves a little study.

• There is the "Advance in Review Order," which is nothing more than a rehearsal of the attack for the benefit of the reviewing General. Arms are presented at the close as a sign that the movement is completed. It used to be the last of eighteen complicated manoeuvres performed by a battalion when tested as to its preparedness for war. In this process was included an advance in line, a volley fired obliquely to the right, another to the left, a further advance and two volleys to the front, officers and colours then took post, the whole moved forward fifty paces and the inspection concluded with a Royal Salute. The last movement is now all that remains.

Since the Sovereign is the symbolic head of the Army, it is natural that joy should be shown on the occasion of his birthday. Noise has been a means of paying high honour and an expression of joy from time immemorial. The Oriental still beats drums and discharges firearms on the occasion of a wedding. The "*Feu de joie*," where each man fires his rifle in turn, is a more personal and striking method of expressing pleasure than volleys; while, incidentally, it prolongs the noise. The Prince of Orange is credited with being the originator of the practice in 1629, after the taking of the fortress of Wesel. The drill was curious: an equal number of pikemen and musketeers were drawn up in line, each pike having a wisp of straw fastened to its point and every musket being loaded with powder only. The straw was set alight, and each musketeer in turn tried to blow out the wisp opposite him by discharging his piece. The pikes were 18 feet long, so it followed that the muskets would be pointed upwards. This was an almost exact counterpart of our modern "*Feu de joie*." The chronicler says: "The volley met with a stop at first, as was perhaps natural at a first attempt, but eventually it ran well."

In the *Funeral Exercises* there remains some remarkable symbolism in the shape of the reversed arms, the three volleys fired in the name of the Trinity, and the Last Post. The significance of the high ascending note on which the latter ends is one of hope and expectancy. Stephen Graham, who served for some time as a private in the Guards, writes very appositely: "When a soldier dies, the Union Jack is laid on his body in token that he died in the service of the State, and that the State takes the responsibility for what it ordered him to do as a soldier. The reversed arms are an acknowledgment of the shame of killing. Death puts the rifle to shame, and the reversal of the barrel is a fitting sign of reverence. The three volleys fired into the air are fired at imaginary devils which might get into men's hearts at such a moment as the burial of a comrade-in-arms. An old superstition has it that the doors

of men's hearts stand ajar at such times and devils may easily get in. The 'Last Post' is the Nunc Dimittis of the dead soldier. It is the last bugle call . . . but it gives promise of *réveille* . . . of the great *réveille* which ultimately the Archangel Gabriel will blow."¹

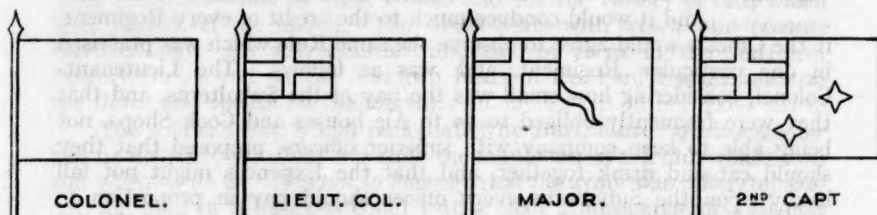
The practice of *Trooping the Colour* was originally an old guard-mounting ceremony, in which the King's Colour is the symbol of the Sovereign and the Regimental Colour the emblem of the soul of the regiment. For this reason it is right that they should be marched round the battalion from time to time, so that every man may pay them all due honour. Colours are usually never touched or carried except by an officer, but this ceremony starts with the emblem in charge of a sergeant with two sentries. Similarly, each "guard" is formed into line without its officers. The sergeants commanding the guards then assemble together with the officers on the saluting base, a relic of the days when they were so collected in order to draw lots for their guard, receive the "parole" and such orders as might be given them. The drums beat the "Assembly," meaning that it is time for officers and N.C.Os. to take up their posts. They recover arms and move by the stately slow march to take over their command.

The first honour is next paid to the Colour by the slow and quick marches played by the band and drums. This is only a preliminary to the reception of the Colour into the ranks of the Battalion. In the old days the grenadier company always found the escort and invariably took the right of the parade; nowadays the right guard still performs this duty, the right having been the post of honour from the time of the Roman Legionaries, since they carried the shield on the left arm.

The "Drummers' Call" is the signal for the captain of the escort to hand over his command to the lieutenant: a curious bit of symbolism. The band and drums then play "The British Grenadiers" and the escort moves across the front of the parade to the Colour. The Sergeant-Major, representing the men, takes it from the sergeant in whose charge it is, and hands it to an officer. The Colour is next received by the escort with full honours. Arms are presented and the band plays the salute: if it is the King's Colour, this is "God Save the King"; if it be the Regimental Colour, the Regimental slow march is played. The Sergeant-Major salutes with his sword, the only occasion on which he does so. The escort stands with its arms at the "present," while the sergeants on the flanks of each rank face outwards and port their arms as if to repel any intruder who may attempt to disturb this solemn moment. The escort with the Colour moves back in slow time to the music of the "Grenadiers' Slow March" to the right of the line; they file through the ranks of the battalion, arms are presented and every man can then see the Colour and show it honour. The ceremony finishes with a march past in quick and slow time.

¹ It is interesting to note that the reversed arms were first used at the funeral of Marlborough in 1722.

The *Colours* themselves now claim attention. Flags were used as rallying points in battle as far back as the days of Babylon. In the middle ages they were flown so that each Lord or Baron should have some sign by which his followers could distinguish him. Each banner carried the respective coat-of-arms of the owner. In the Civil War of 1642 a fifth company colours came into use and formed the personal banners of the officers who raised the battalions or companies. There were ten companies to a battalion, the Colonel, Lieutenant Colonel, Major and seven captains, each having one, so that every battalion had ten colours. About 1661 these colours were reduced to some kind of order and Captain Thomas Venn, writing in 1672, gives us the regulations: "The Colonel's Colour, in the first place, is of a pure clean colour, without any mixture. The Lieutenant-Colonel's only with St. George's arms in the upper corner next the staff; the Major's the same, but with a little stream blazant, and every captain with St. George's Armes alone, but with so many spots or several devices as pertain to the dignity of their several places." These survived until the time of Queen Anne, when the number



of colours per regiment was reduced to two, but Captain Venn's regulation survives in the Colours of the foot guards to this day. So in the Grenadier Guards in the first Battalion (the Colonel's Company) the King's Colour is still plain crimson, with certain Imperial devices which have been added later. In the second battalion (the Lieutenant-Colonel's Company) the Union is seen in the dexter canton; in the third battalion (the Major's Company) the colour is the same as in the second battalion but with the "Little Stream Blazant" or "Pile Wavy." In addition, the old company badges, Captain Venn's "spots and devices," are still borne in rotation on the Regimental Colours.

At the time of Waterloo the colours measured 6 ft. 2 in. by 6 ft., and were carried on half pikes, the length of which was 9 ft. 10 in. The staffs to which the colours are fixed are still called "colour pikes" and used to end in a conventional spearhead, instead of the modern lion and crown. The naval White Ensign is often flown from a staff ending in a sort of modified halbert head.

Colours carried in action participated in all the varying fortunes of the day and were often cut up by enemy fire. Those of the 57th Regiment, for instance, suffered severely at Albuhera; the staff of the King's Colour was broken, receiving seventeen shots, the regimental

colour pierced with twenty-one shots. So Colours came to be regarded as more than mere squares of silk carried on ensign pikes. They would be thought of as bringers of luck and mementoes of well-contested campaigns. Old soldiers would gaze on them with affection; recruits would be shown them with awe, while tales of devotion to duty would be recounted and they came to be invested with an almost religious significance. Indeed no more fitting symbol of the soul of the regiment could be found. "They fly not only for the living but for all who have died in the regiment for the King, not only as an augury of battles to be won, but a token of every field of the past."

A few words about *Officer's Messes* may be of interest. They were no doubt instituted for the sake of companionship, convenience and economy. "The New Art of War" published in 1740 under the heading "The Duty of an Ensign and how he ought to behave himself" stated: "He must think nothing hard, but make a Virtue of Necessity, and study to please his superior Officers. He must be frugal some Days in the Week, that he may be enabled to keep Company with his Officers when they do him the honour to ask him to drink a Bottle with them."

And it would conduce much to the credit of every Regiment, if the Officers would agree to observe the same Rule which was practised in one particular Regiment, and was as follows. The Lieutenant-Colonel, considering how small was the pay of the Subalterns, and that they were frequently obliged to go to Ale houses and Cook Shops, not being able to keep company with superior officers, proposed that they should eat and drink together, and that the Expences might not fall heavy upon the Subalterns every officer should pay in proportion to his daily Subsistence Money. This was unanimously approved, and the Ensigns and Lieutenants were thereby capacitated to keep company at a Tavern with their superior Officers and thereby have an opportunity to improve themselves in many respects."

The origin of the *Military Band* is interesting. In feudal days, when the Barons went to war, they did so in considerable comfort. They would not take the field without a full complement of retainers and minstrels. During the Crusades they learnt from the Saracens another use for musicians, who were now grouped round the standard in order to blow their hardest while the fight was in progress. The standard, a rallying point for the retainers, might be obscured in the dust of the battle, so that, if the combatants could still hear soul-inspiring music above the clash of arms, they would know that all was well, whereas, if the strains died away, it was the signal that the ensign was in danger, or that the day was lost.

The first duty of the band is nowadays to assist the men on the march, and Marshal Saxe has said something about that. In his "Art of War" he remarks: "If on a march the front is ordered to quicken its pace the rear must unavoidably lose ground, . . . to regain which it sets up a run . . . which presently throws the whole into disorder. To obviate this is nothing more than to march in CADENCE, in which

alone consists the whole mystery. It was to preserve this that Martial Sounds were first invented and drums introduced; and in this sense only is to be understood the word TACTICK. . . . By means of this you will always be able to regulate your pace at pleasure; your rear can never lag behind, and the whole will step with the same foot; your wheelings will be performed with celerity and grace, and your men's legs will never mix together, nor will they be fatigued in any degree equal to what they are at present." In addition, it used to be part of a drummer's duties to act as messenger to the enemy, to carry the flag of truce and incidentally to report any scraps of intelligence which came his way. These duties were difficult and often dangerous; as a recompense he was paid at a slightly higher rate than the ordinary soldier. It was only recently that the drummer in our army ceased to draw a penny a day extra pay.

In South Germany, during the sixteenth century, there came into military power a body of men called Landsknechts; their fame spread throughout Europe, and some of their customs remain to this day. They were renowned for their *Drums* and for the variety of rolls which they played on the march. The drum beats with which our present marches start are still exactly those used by them in the sixteenth century (*i.e.*, a roll on the first two beats of the bar, a single note on the third, and silence on the fourth).

The soldier's day is still punctuated by *Bugle Calls*. As the soldier had no necessity for clock or watch, the bugles would tell him what to do and when to do it. It is not so long ago that the army was illiterate, and not one man in a hundred could read a clock; nowadays all men can tell the time and many have watches, but the calls survive. Bugles were introduced somewhere about the end of the eighteenth century, possibly copied from the German Jäger, or gamekeepers, who took their horns into the field. They were originally confined strictly to light infantry.

The evolution of *Uniform* is worth mentioning. In the days of Charles II. military was much the same as civilian dress, except that there was a certain regimental uniformity of colour and facings. As the fashions changed, so did uniform, but much more slowly. We are always slow to follow fashion, so we still wear the strapped overalls and Wellington boots of mid-Victorian days. The Charles II. pattern lasted, with small modifications only, for nearly a hundred years. Nevertheless it did change, for the front skirts of the coat were cut off in order to conform to the civilian fashion of wearing tails only. From about 1780 military began to diverge from civilian dress: thus the helmets of Light Dragoons were entirely fanciful, and had no counterpart in civilian attire. The cocked hat, however, survived until 1801, when it gave place first to a round hat, which civilians were beginning to affect, and then to the shako. Between the Peninsular and the Crimean wars uniforms, or "Regimentals," as they were called, became extravagant and lost all relation to civil dress. Officers eventually got out of uniform at the earliest possible moment, simply because it grew so uncomfortable.

High collars and stocks almost strangled the men on the march. After the Crimea things improved a little. The tunic was introduced, but uniform, as a whole, still remained eminently unpractical. Khaki was first worn in India; it was originally white drill dyed with curry powder. It was used in the Afghan War, 1878-9. But troops sent to Egypt in 1882 received special loose red serge jackets rather like Norfolk jackets, with roll collars so as to leave the throat free. In South Africa the increased range and accuracy of rifles demanded invisibility, and all troops wore khaki. After South Africa a civilian firm was asked to design a serviceable dress. So we returned to the usage of Charles II. in that, excepting for colour, military and civilian dress should be much the same.

In full dress, staff and aides-de-camp wear "*aiguillettes*"—gilded cords ending in tagged points. Several traditions account for their origin, some saying that they denote the rope and pegs which the squire carried so as to picket his knight's horse; others that they were the *aiguilles*, or needles, used for clearing the touch-holes of the old muskets, with the lanyards which fastened them to the soldier's accoutrements. It is even suggested that they were the Provost Marshal's rope with which he hung malefactors. It is possible that they are merely exaggerations of the bunches of ribbons which were the earliest form of epaulette.

James's "Military Dictionary" says that the *red sashes* worn by sergeants are derived from cloaks "invented for the convenience and ease of wounded officers and others. By means of which (in case any of them were so badly wounded as to render them incapable of remaining at their posts) they might be carried off with the assistance of two men."

The Highlander's *kilt* is of very ancient origin. So much has been written on the subject that there is no need to add to it. The kilt always seems to have struck the Southerner as curious. Even in 1636 Defoe's Cavalier on first seeing them wrote: "The Soldiers made a very uncouth figure, especially the highlanders. The boldness and barbarity of their garb seem to have something in it remarkable. . . . Their dress was as antique as the rest. . . . These fellows looked, when drawn out, like a regiment of meery andrews, ready for Bartholomew fair."

The *Nomenclature of Military Ranks* has always been puzzling. Why, for instance, should a Lieutenant-General be senior to a Major-General, whereas a Lieutenant is junior to a Major? What is the origin of the curious "Lance" rank? Some derivations can be traced to Cromwell's New Model Army, while others are older still.

In the New Model Army the ranks of the officers were:—

- | | | |
|------------------------|---|---|
| Captain-General | - | The Commander-in-Chief. |
| Lieutenant-General | - | The 2nd in command of the C.-in-C. ("Lieutenant" means "assistant"); he also commanded the Horse. |
| Sergeant-Major-General | - | Acted as a sort of Chief Staff Officer and commanded the Foot Soldiers. |

- Colonel* - Commanded a Regiment.
Lieutenant-Colonel - 2nd in command to a Colonel.
Sergeant-Major - The Staff Officer of the Regiment.
Captain - A Commander of a Company.
Lieutenant - An assistant to the Captain.
Ensign - Who carried the Standard.

Leave out the word "Captain" from "Captain-General," and "Sergeant" from "Sergeant-Major-General" and from "Sergeant-Major" and the denomination of our modern ranks remains almost exactly. The Sergeant-Major was thus originally a commissioned officer.

As regards the N.C.Os. :—

- Bombardier* - The man who looked after the "Bombard" or Mortar.
Lance - The word "Lance" in Lance-Corporal or Lance-Sergeant means "lance" in a literal sense. In old days mounted men were considered superior to those on foot; a mounted man-at-arms might be, and often was, unhorsed in battle and compelled to fight with the foot soldiers, but the lance which he still carried would indicate his former rank and gave him a certain prestige. From the "Lance-man of the Foot," as he was called, we get our modern lance ranks.

Half Europe has contributed to the *British Military Vocabulary*. After every campaign new expressions were added, derived either from our allies or enemies. A few of the more curious may be worth mentioning :—

- Batman* - Derived from the French *bat*, a pack saddle; it thus means the man who looks after his officer's baggage.
Boot and Saddle - This picturesque trumpet call comes from the French *boute-selle*, literally "put saddle"—i.e., saddle up, *bouter la selle*.
Bugle - The badge worn by Rifle and Light Infantry Regiments is the ancient form of the bugle. Bugle is a French word. It originally meant "wild ox," and the real expression was "bugle horn"—i.e., "wild ox horn."
Cashier - Is the Dutch *casseeren*, having the same meaning as the French *casser*, to break; although in its original sense it did not necessarily imply disgrace.
Furlough - From the Dutch *verlof*, meaning "for leave"; it used to be pronounced to rhyme with "cough."
Grenade - Comes from the Spanish *granada*, a pomegranate, the original grenades being of that shape.
Piquet - A reminder of the days of pikes: as these were gradually superseded by firearms, a few were still kept in the centre of the Battalion as a guard for

the Colours. This handful of men was known in French as the *piquette* or little body of pikemen, and the word was afterwards taken to refer to any small military force.

Platoon - - Comes from Gustavus Adolphus's Swedish *peleton*, which was a unit of 48 men, which in turn came from the French *peloton*. Literally it meant a ball.

Roster - - Is from the Dutch *rooster*, meaning a gridiron; roster is a list of individuals or units in rotation and no doubt was drawn up on paper lined like a gridiron.

"*Trail Arms*" - This is the word of command, "Trayle your pikes," whereupon the soldier seized his pike just short of the head and allowed the long shaft to trail behind him. The phrase was transferred to firearms.

In conclusion, it might be mentioned how certain duties of officers, as set forth in old manuals, show that the welfare of the troops has long formed an integral part of military life. One old book gives a Captain's duties as follows:—

"He ought to be very careful to keepe his souldiers in action, whereby idle expense of time (as drinking and playing) may be prevented, which usually ends in quarrelling and bloodshed."

and a Lieutenant's duties:—

"... he is to take notice of what discords, quarrels, and debates arise among the souldiers of his band; he is to pacify them if it may be, otherwise to commit them; he is to judge and determine such disputes with gravity and good speeches, and where the fault is, to make him acknowledge it and crave pardon of the party he hath abused. . . . He is to be carefull that every souldier have a sufficient lodging in garrison, and in the field a hut; he is also to take due care of the sick and maymed, that they perish not for want of means or looking into; he is also to take care that the sutlers do not oppresse and rack the poor souldiers in their victuals and drinke. . . ."

In conclusion, I should like to quote "a worthy speech" made by the Earl of Essex at the head of his "armie" before arrival at Worcester on Saturday being 24th Sept., 1642. He says:—

"I shall desire all and every officer to endeavour by love and affable carriage to command his soldiers, since what is done for fear is done unwillingly, and what is unwillingly attempted can never prosper.

"Likewise tis my request that you be very carefull in the exercising of your men, and bring them to use their arms readily and expertly, and not to busy them in practizing the ceremonious forms of Military discipline, onely let them be well instructed in

the necessary rudiments of warre, that they may know how to fall on with discretion and retreat with care, how to maintaine their order and make good their ground."

DISCUSSION.

GENERAL SIR R. WHIGHAM: There are two questions on small points I would like to raise. These are mainly concerned with nomenclature. The first refers to the Aiguillette of the staff officer. Not long ago I asked a distinguished French General if he knew the origin of Aiguillettes, and he gave me an answer which suggested rather a more mundane origin than the derivations given by Major Tomes, namely, that an Aiguillette was merely a pencil which a good staff officer should always have at hand and so tied to his person by a piece of string. The other point relates to the word "roster." The suggestion that the roster, or gridiron, was of Dutch derivation is new to me. Many old documents in the War Office, and some not so very old either, contain the word, which is always spelt "rolster." It was the rolster or roll.¹

CAPTAIN R. STEELE: I should like to raise a very small point with regard to the origin of Khaki. I believe the lecturer said that Khaki was first introduced in 1878. I recently read an extract from a letter written by Hodson of Hodson's Horse in the 40's. He writes home for helmets and clothing of a dust colour for the Corps of Guides, of which he was then second in command. Sir C. Napier, Commander-in-Chief in India, said when he inspected the men, that they were the only properly dressed troops he had seen in India up to that date.

COLONEL SIR CHARLES YATE: In Charles II.'s time, the lecturer told us that military and civil dress were practically identical, and I would like to ask whether it is not possible that a Mess dress be given to us that will more closely correspond to the civil dress. If some change could be introduced, it would be much to the advantage of the Service. I would also like to ask the lecturer on what date did the rank of Sergeant-Major, which the lecturer described as the staff officer to the regiment, cease; and from what date until what date was the staff officer of the regiment called the Sergeant-Major?

MAJOR J. GODDARD: May I ask the lecturer one question for my own information? Can he throw any light on a custom which exists in the 2nd battalion of the "Loyal" North Lancashire, now the "Loyal" Regiment: it was the old 81st. The question arises in connection with the ceremony of trooping the colours. When the parade is concluded and the colours are marched off, this battalion observes the custom of marching off its colours with a drummer and fifer in addition to the ordinary escort. I have never seen that custom followed in any other battalion and I should be grateful if the lecturer could tell me the origin of it.

SIR CHARLES YATE: One other question I should like to ask, namely, can the lecturer tell us what a Quartermaster in the regiment was one hundred and fifty or more years ago—say, in 1750?

MAJOR EVAN FYERS: I should like to mention a custom which I am told still prevails in the 12th Lancers, the Royal Scots Fusiliers and the 10th Hussars,

¹ The Aiguillette of the Japanese Army is actually adapted for use as a pencil.—EDITOR.

which is apparently about 110 years old. It is this: every night before Retreat the following tunes are played by the band: the first is a Vesper hymn, the second is a Spanish chaunt, and the third, apparently, is some kind of Russian anthem. It cannot be the national anthem, because I am informed by an officer of the Russian Army that the National Anthem of Russia was not introduced until the '40's. It has been suggested that the custom dates from the Peninsular War, and is connected with a breach of discipline on the part of some men in those regiments, as a result of which the Duke of Wellington ordered that these tunes should be played for a hundred years afterwards. I should be glad if the lecturer could throw light on that question. The officers of the 12th Lancers would be very glad to obtain information on this point.

THE CHAIRMAN (The Hon. J. W. Fortescue, C.V.O.): Ladies and Gentlemen, the lecturer has, I think very unfairly, asked me to answer the questions put to him. I do not know that I can, but I would like, if I may, to add a few observations of my own.

In the first place, with regard to the salute: we salute in the Western world by taking off our hats. In the Eastern world men salute by taking off their shoes. In the common Oriental salute there is a pretence at throwing earth on the head. Different gestures mean much in different places. At Windsor recently some of our Abyssinian visitors arrived, and I was asked to entertain them. I said: "How can I? I cannot speak their tongue! Shall I beckon them like this?" (fingers upward.) I received the answer: "For God's sake don't beckon them like that; that is the greatest insult that you can offer. Beckon like this" (fingers downward).

Again, if the history of costume be studied, it will be found that every sort of hat could not be removed—I am not talking of helmets but of the ordinary head-dress. In the seventeenth century privileged people rather made a point of keeping their hats on. For instance, there is a painting at Windsor of a ball given to Charles II. at the Hague before he sailed for England in 1660. Only three people have retained their hats—Charles himself; his brother James, afterwards James II.; and his brother Henry, Duke of Gloucester. Evidently the practice endured; this is shown in a ridiculous old print of a ball at Government House, Jamaica, in 1797; it is abominably drawn and a little vulgar. In that print the Governor and the Admiral are both shown sitting in a kind of gallery with their hats on, while the people are dancing down below with their hats off. The representative of His Majesty and the Admiral in command of the station wore their hats, but nobody else did. The custom has gone out, but it gives some clue to the significance of salutes and at any rate the significance of keeping the hat on.

One speaker referred to the question of mess and mess dress. In the same print just mentioned all the military officers are seen in full dress coats, white shorts, white silk stockings and shoes; and the naval officers were dressed the same. Some of you may have seen the picture of the marriage of the Prince Consort to Queen Victoria. The Prince Consort is wearing the Court dress of a General, which is exactly the same dress as I have just mentioned, full dress coat, white shorts, white silk stockings and so on. All the later dresses came in during the extravagant reign of George IV., when uniforms were changed about every three months.

I think I am responsible for the statement Major Tomes gave about Marlborough's funeral, the practice of reversing arms. I found it in a newspaper. I do not know whether it is any older, but it was the practice, according to the newspapers, although the newspapers were not always veracious two centuries ago. But I think they must have been right. It must have been a novelty, though, of

course, it may have been older still. The three volleys fired in the name of the Trinity I have traced back as far as Sir Philip Sidney's funeral. That came from the German Landsknechte.

Visiting rounds connected with guards is a very old institution. I discovered the origin of that in connection with something that occurred in Kensington Palace. The sentries, and, in fact, the whole guard, turned out in their entirety to help some burglars to plunder the Palace. They were put there to protect it, but they all had friends outside and they helped the burglars to come in. After that there were visiting rounds to see that the guards behaved themselves. That occurred at a time between the end of Marlborough's Wars, about 1715 and 1740, before we began to fight France for the empire of the world.

Colours may be traced to the earliest times. Company colours are considerably older than the new model Army and they lasted, I cannot say precisely how long. They were reduced first to three and finally to two. I have the custody at Windsor of the original book treating of the colours of the regiments as they existed about 1686, an extremely interesting volume. Yet the whole history of the subject is most obscure. The Colonels then did what was right in their own eyes. It is necessary to emphasise the point that a Colonel was proprietor of his regiment and did much what he pleased. One charming Colonel put his Grenadiers into ruffles; he also insisted that they should wear large whiskers. The origin of epaulettes is mentioned in the "Lives of the Lindsays." As far as I can make out, the officers wore bundles of ribbons simply for ornament. It was not uniform, although it may have been uniform in that regiment, but any fancy ornament of the kind was permitted by the colonel.

The eighteen manoeuvres did not come in till 1781, and were invented by David Dundas in the first drill-book issued for the whole Army written by a private individual and sanctioned by authority. Everybody had his own drill book before that and did what was right in his own eyes. The eighteen manoeuvres became famous because officers considered that they were the beginning and end of their duties. You remember the remark Sir John Moore made to Dundas: "Your drill book would have done a great deal of good if it had not been for those damned eighteen manoeuvres;" whereupon Dundas replied: "Blockheads do not understand. That is the danger of making a drill book." There was one weapon that Major Tomes omitted to mention, namely, the Field-Marshal's *bâton*, which I have traced back to an ordinary bludgeon. I have seen that which belonged to the Duke of Cumberland, which really was an offensive weapon, a bludgeon; and there is a similar one to be seen in a picture by Rubens at Windsor of the Battle of Nordlingen, in the hand of Prince Bernhard of Saxe-Weimar. I think it must have been confined to Teutonic people and copied by the French.

We are a bludgeoning race. We do not thrust, we do not stab, we are not very good at cutting, but what we do love is a bludgeon. I asked Sir Philip Chetwode whether, in the pursuit of the Turks in the Holy Land, our men made good use of the new pattern sword. He said: "No; they used them just like a bludgeon. What else should they do? They are English."

With regard to messes, if any of you gentlemen know anything about this obscure subject I should be much obliged if you would let me know. I believe the origin of them to have been very simple, namely, that, as was mentioned in this drill book, officers for the sake of economy put their shillings together—they were not paid very much—to cheapen their meals, and gradually made the mess an institution. Barracks and officers' quarters are comparatively modern things, and used not to be built on a great scale; but there were barracks for small detachments in the middle of the Great War at the end of the 18th century. There

were barracks in Ireland, but these were also for small detachments, so that there was little chance to get together a regimental mess. This was only possible in quarters like the Tower, and one or two other barracks in strongholds and forts where a battalion could be brought together; but for the most part the men were scattered. Billets were very widespread. I was told by an officer of the 7th Fusiliers, a man who commanded that regiment, served in the Crimea, and had the top of his head blown off, that he saw his battalion come back from India, where they had been for goodness knows how many years—perhaps 20 years or thereabouts. He had joined it as a subaltern. The men were marched in to London, and none of them knew in the slightest degree where they were or what they were to do. The colonel dismissed the battalion at Portland Place. The men gradually dispersed, and the next morning he was obliged to send a band all round the neighbouring streets to collect his battalion together. That shows how far the unity of the battalion is a comparatively modern thing. You must remember that soldiers frequently did the duty of police. The county constabulary were not established until 1855, and the Metropolitan Police were only established in 1829. Soldiers were called upon to do a deal of repressive police work in the provinces, and the result was that we had all these little scattered barracks which you must know at Preston and places of that kind which kept the regiments split up. That, of course, was very bad for discipline, both of officers and men. I notice that George Napier said that he outran his income by some extravagance and that he lived on bread and milk in his quarters for some weeks to recover himself, and that he could not join the regimental mess. That shows there was no obligation to attend it. That would be at the end of the 18th century—perhaps 1802 or thereabouts. How far this sort of thing was carried out in India one does not know, except that we are aware that in India the officers lived in great luxury and that when they went campaigning they took an enormous amount of baggage with them.

Drums are an Oriental invention. They came back from the Crusades. I do not know if you have ever seen any table of the drum calls. I know the names of a lot of them. The Grenadiers' march was a drum march; it was simply a beat of the drum. The 3rd battalion of the Grenadiers use the drums a great deal. One can get some information from them, but all kinds of curious drum calls are mentioned for the Dragoons and the Infantry. If any of you gentlemen ever happen to run across any information in regard to that subject I should be grateful for your help.

The bugle calls were written by Joseph Haydn, the great musician, about 1793. He was over here at the time, and George III., who was an enthusiastic musician and a great admirer of Handel, tried to keep Haydn in the country. Joseph insisted on going back to Germany, but he wrote the bugle calls before doing so. They are all his, and very good calls they are.

There is another point of interest in connection with drums and bugle calls. Bugles were almost certainly borrowed from the German jägers after the Seven Years' War. I do not think there is the slightest doubt that the bugle was the horn of the chase. The curious thing is that the horn-signals of the chase right back in the 14th century were very elaborate; and why they were not used earlier as signals for war I never could understand. As Major Toms said, watches and clocks were rare and the men had to take their time from the bugle and the drum calls. I can tell you a curious little detail about that. I have been through the whole of Wellington's papers, as the Duke very kindly admitted me to Apsley House, and I went through the whole of the papers of Wellington's campaigns. There were numbers of messages from outposts and reconnoitring officers, yet

not one bore the hour on them. Nowadays, of course, it is a point of honour that the hour and minute should be marked down exactly. On not one of the Peninsular papers is the hour and minute mentioned, not even the hour and minute of receipt. The Military Secretary kept a table of the papers that came in and put down that they came in on such a day, but not the hour. It shows that watches must have been very rare. Watches, which go back to the 16th century, were very expensive. The cheap watch is a modern invention.

There is another point I should like to mention. Major Tomes mentioned the sutlers. They are the origin of the canteen. I believe that in Germany until the last war, 1914, the regimental canteen was kept by an old soldier, very much to his own profit. He was the counterpart of the old camp sutler. The men on service were provided with bread and fuel only; everything else was supplied by the regimental sutler, who became a great institution. There is a story of a celebrated female sutler who was her own chucker-out. The great trouble was that these sutlers settled down in the barrack yard and it was found impossible to prevent men from smuggling spirits into barracks, so the authorities allowed spirits to be sold in the canteen. That, in the early nineteenth century and during the latter half of the eighteenth century, was the origin of nearly all the crime in the Army. The canteens were let by tender and the highest tender was accepted. The contractor had to get his money back somehow, and he got it by selling the men infamous liquor. The men got mad drunk, struck their officers, and then trouble ensued.

Major Tomes has told us how old—happily and especially in the British Army—is not merely the habit but the sense of duty in the officers to take care of their men. I have had some terrible struggles in the course of my writing of historical records, but one thing that has always made me joyful right through has been to find that every improvement laid down in the regulations for the benefit of the private soldier has been started by the regimental officers on their own account first. The regimental officer is the real friend of the British soldier and always has been, and I honour him enormously for it.

Then there was a terrible question asked about a Quartermaster, which I am afraid I cannot answer. I feel guilty and will see if I cannot do so later. I am also afraid I cannot say anything about Aiguillettes.

With regard to the word "roster," the Oxford New English Dictionary is against General Whigham on that point. Reference has been made to the roster being lined, but though I have been through a good many muster rolls I have not found a great many of them ruled. That bears out General Whigham's remarks. I think we will leave the matter doubtful and at the moment not pronounce against the roster.

With regard to the Sergeant-Major, of course the Sergeant was the man who gave the orders to the men. The Sergeant-Major was the man who gave the orders to the Sergeant, and the Sergeant-Major-General is the man who gives the order to the Sergeant-Major. That is the chain of command. The Major did not cease to be the chief staff officer. The Adjutant was originally the Major's Adjutant, the Major's helper, and in France he is still called *aide-major*. I suppose the Majors and others of high rank went away and left the Adjutant to do all the staff work. Properly speaking, the Major, the second in command, is the chief staff officer of the regiment, and I think the tendency is to make him so again.

SIR CHARLES YATE: Was the Sergeant-Major a commissioned officer?

THE CHAIRMAN: Yes. He is now what we call the Major. The title of Sergeant-Major for non-commissioned officers comes much later. The Sergeant

remained the chief non-commissioned officer for a very long time. It was owing to the fact that the men promoted from the ranks in the old days were rather too fond of drink that an alteration was made. It was at the request of Wellington that the Colour Sergeant, a sort of superior sergeant, was instituted. That was to satisfy the proper craving of men in the ranks for an opportunity of rising to a certain extent.

I am afraid I cannot help the speaker who asked about the fife and drum. That must be looked into. I have only seen a single fife and drum once and that was at half-past five in the morning in the garrison of Mayence. It was practically *réveillé*. The fife and drum (a little German drum) walked round followed by a mounted officer who would be the field officer of the day. That is the only time I have ever seen one. I should say, judging from my studies, that it is very likely borrowed from Germany. I will try and find out.

It now affords me much pleasure to propose a hearty vote of thanks to our lecturer for his excellent lecture, which I hope will be useful to many officers for the instruction of their men.

The resolution was then put and carried with acclamation.

MAJOR C. T. TOMES: Mr. Chairman, Ladies and Gentlemen, Thank you very much.

ADMIRAL SIR REGINALD G. O. TUPPER, G.B.E., K.C.B., C.V.O.: Ladies and Gentlemen,—It is a great pleasure to me to ask you to join with me in expressing your warmest thanks to Mr. Fortescue for the very able way in which he has performed the duties of Chairman. It is not often that we get a Chairman at a lecture who can give such very valuable supplementary information as the Chairman has done this afternoon as a sequel to the interesting lecture we have heard. I am sure we have all enjoyed the remarks of Mr. Fortescue very much indeed, and I hope you will join with me in giving the Librarian of Windsor Castle the applause which he has so well earned.

The resolution was carried by acclamation.

PROGRESS IN THE MECHANICALISATION OF MODERN ARMIES.

By COLONEL J. F. C. FULLER, D.S.O.

On Wednesday, 19th November, 1924, at 3 p.m.

MAJOR-GENERAL SIR E. D. SWINTON, K.B.E., C.B., D.S.O.,
in the Chair.

THE CHAIRMAN: My Lord, Ladies and Gentlemen, I need not take up much of your time in introducing the lecturer. He is well known to all of us as a thinker on war, a writer on the military art, and an apostle of progress, whose attitude, or "general idea," can be expressed in the words "*Quo Vadis?*" This afternoon he is treating of the Mechanicalisation of Armies—a subject which has been extremely important of recent years and grows more so every day, having not only been made possible but rendered inevitable by the rapid growth of scientific knowledge. He will speak of the present and of the future, mostly in reference to the tactical application of this development in mobility. I think that this afternoon his "special idea" will best be conveyed by the words "*Quomodo Vadis?*" With your permission I will ask Colonel Fuller to deliver his lecture.

LECTURE.

COLONEL J. F. C. FULLER: General Swinton, my Lord, Ladies and Gentlemen, before I begin this lecture I wish to make a short statement. I have been requested by the War Office to say that the views expressed in this lecture are not necessarily those of the General Staff. Except where I quote others, the views expressed are my own; but, as you know, a serving officer is under the difficulty that, whatever he says publicly or whatever he writes, has to be censored. In tackling this question of mechanicalisation and its progress in Modern Armies you will realise at once that it is an immense subject, for it embraces all Services, all arms, all branches and methods of war. It is so extensive that I feel, if I attempt to summarise all that has been accomplished since the termination of the War, or rather all I know, the result would be a somewhat bewildering string of facts. I intend, therefore, to limit the scope of my lecture in the main to tracked vehicles and, further, to limit this smaller portion of the whole subject to the tactical ideas underlying their use, and more especially so in our own Army.

If I can show, as regards our own efforts, how we should examine mechanicalisation tactically, then I can leave it to you to apply the same method to the examination of foreign armies.

THE STARTING-POINT AND GOAL.

In examining this problem, what are our starting-point and our goal? Our starting-point is the last great war and our goal is the next, and the problem swings between these two pivots.

The last war was a war of hordes, the like of which had not been seen in Europe since the days of Xerxes. These hordes were impeded by their size and were so vulnerable to fire that, to preserve their lives, men went to earth like foxes. It was a war of trenches and of wire, and of guns and shells to cut this wire and to destroy these trenches. It cost us nearly 1,000,000 in killed and £8,000,000,000 in money; it was a very static affair.

The outstanding problem of this war was *how to move*; tactically, this problem was partially solved by tanks; strategically, by railways and lorries, but administratively the lorry was limited in effect, since it could not move off the roads. The re-establishment of movement was even more a question of the petrol engine than of fire-power, and without the petrol engine the war would have been pronouncedly different.

Now as to the next war. It is inconceivable that an organised Power would wish to fight the operations of 1914-1917 over again. It is inconceivable that if war broke out to-morrow any great nation would not attempt to pick up the thread which it dropped in 1918 and render its fighting forces as mobile as possible, and mobility does not only mean power of movement, but protected movement from which offensive power can be developed. The thread we dropped in 1918 was our programme for 1919, and it included 8,000 tanks and 10,000 cross-country supply vehicles.

We may not be able to discover much about the next war, but we can gauge this: that the side which possesses superior mobility, superior means of protection, and, therefore, superior offensive power, is the side which is more likely to win.

Do our tactical ideas fit in with this? I do not think so. I may be wrong, but, if I am right, then I feel I am justified in saying that much of present-day military thought has not yet grasped the fundamental character of the last war, and, consequently, is handicapped in its attempts to diagnose the nature of the next.

THE TACTICAL IDEA.

To-day all great armies are beginning to mechanicalise themselves. Even the Amir of Afghanistan, in order to suppress a recent rebellion, moved a force of men in Albion lorries down the Kabul-Kandahar road. Does this contradict my contention that the fundamental nature of the

last war has not been grasped? No; because, if we are going to mechanicalise *on scientific lines*, the mere changing of equipment is not sufficient, for change of weapons must be accompanied by a change in tactical idea. It is no good giving men tanks if they are going to use them like Infantry, or cross-country supply vehicles if they refuse to run them off the roads.

I will examine this point in more detail, as it constitutes the foundation of my theory of mechanicalisation.

In 1908, Major Donohue invented a tracked motor-car and gun carriage, and the brains of the Army inspected it at Aldershot; but the only idea which struck them was that such a mounting was unnecessary. Had they, however, understood the fundamental characteristics of the Russo-Japanese War of 1904-1905, they would have realised how useful a modified vehicle of this type might prove in battles of wire and trenches, such as Nan-Shan or Mukden, or of the machine-gun in defence, such as at Hei-kou-tai.

When, in 1914, Colonel Swinton suggested building an armoured caterpillar vehicle, it was not because he had a mechanical idea in his head, but a *tactical idea*. He saw infantry continually rendered impotent by wire and machine guns. He appreciated the fundamental character of the war at the moment. And then, because he knew of the Holt tractor, this inert knowledge, fertilised by this tactical idea, brought forth the tank. And what was the tank? A machine constructed to solve a tactical problem or a series of tactical problems and not *all* tactical problems, and the number of problems it could solve depended *absolutely* on its limitations, which were, or should have been, common knowledge.

How was the machine used? For a year it was repeatedly plunged into swamps and used under conditions which did not fit its limitations; then, on 20th November, 1917, a startling victory was won, because conditions did fit these limitations. Battles of the Cambrai type could never be more than limited operations, because the Mark IV tank was designed to convoy infantry and its radius of action was only 25 miles. It was a push-and-thrust machine—a mechanical dagger.

In order to extend the powers of the tank and support the dagger with a mechanical bullet, in May, 1918, the Tank Corps Headquarters asked for two types of tanks—a superior convoyer of infantry and a new fast long-radius machine which could work as mechanical cavalry.

The tactical idea behind this new machine was ability to burst right through the enemy's battle front and attack his headquarters and supply centres far in rear, or to pursue the enemy for about 100 miles, after the infantry machines had smashed this front. The result was that we should, in 1919, have had a slow cavalry machine—the Medium "C" and possibly a fast cavalry machine of 20 miles per hour speed—the Medium "D" as well as the Mark V infantry tank. The war ended before these machines were produced; nevertheless, the tactical tendency was to avoid the frontal attack or, anyhow, to minimise its attrition, and in place of delivering the decisive attack, as at Cambrai, against the enemy's front,

to attack him in flank and rear. This was the tactical idea for 1919, and machines were built to fit it.

A short time back I said that all the more highly organised armies are to-day mechanicalising their troops. What, then, are their tactical ideas—are they scientific or are they confused—which? If we can gauge the correct answers, then we shall know what to expect in the next war.

The way to set about solving this problem is as follows:—

- (1) We know that the tactical powers of a machine are governed by its limitations.
- (2) We know that the tactical idea finds expression in the use of the machine.

If tactics and limitations coincide, we shall know that the trainers of the army in question are thinking logically; if not, that the idea behind their tactics is confused. I will now examine what is happening in our own Army as regards the mechanicalisation of the fighting arms.

MECHANICALISATION IN THE BRITISH ARMY.

It is always a delicate task for a serving officer to appear to criticise the Army to which he belongs, for armies are very conservative organisations, and even in these enlightened days there still exist those who consider that criticism and insubordination are synonymous terms.

In order to be quite fair in any criticism I may offer—and, in truth, I am offering suggestions rather than criticism—before writing this lecture I went to the War Office to ascertain the General Staff policy as to mechanicalisation, and, briefly, this is what I was told:—

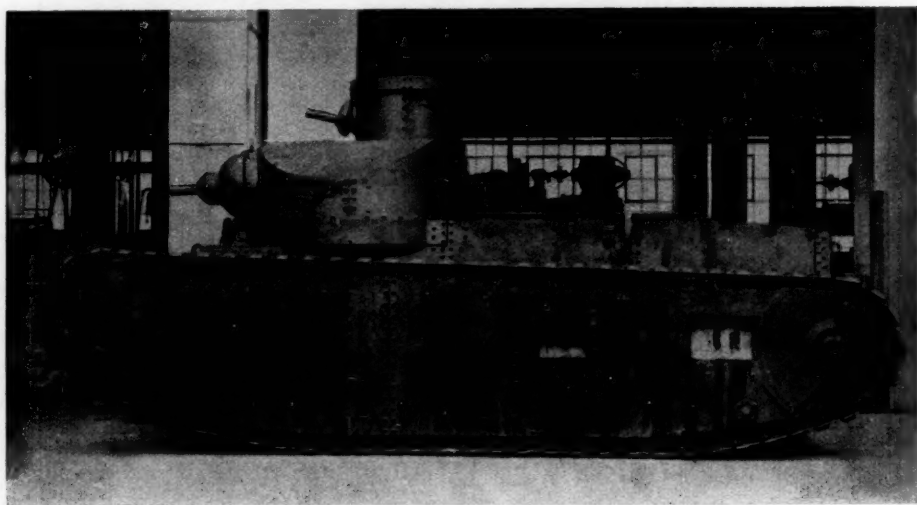
“The General Staff is confronted by many difficulties, especially lack of money. The present Army has to be maintained and a new Army slowly built up, for a war of movement in which we hope to attain advances of 100 miles in 24 hours. At present, infantry can be moved by lorries, but the problem of moving their first line transport has not been solved. Tractor-drawn artillery can move at the above speed; so can tanks, if they are light and well engined. The Vickers tank meets these requirements, and it is looked upon as a ‘universal’ machine—that is, one which can be used in all tactical operations.”

This, briefly, is the General Staff policy, and I think you will agree with me that it shows a progressive spirit; but one thing it does not tell us is—the tactical idea or doctrine visualised by the General Staff in a war of movement.

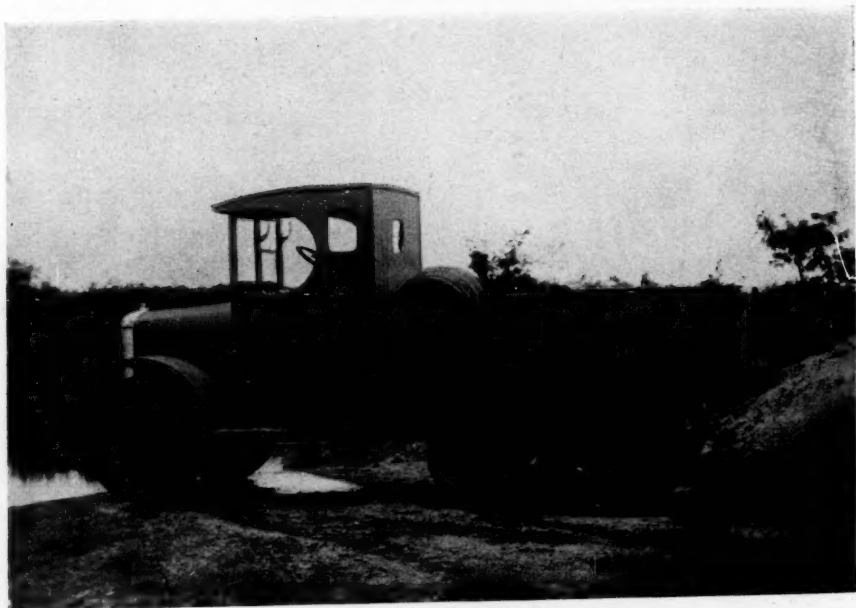
If history be consulted, we shall find that, in wars of movement, the following tactics have again and again proved successful: the enemy is first fixed, and, secondly, he is smashed. To fix an enemy, he must be pinned down, and once he is pinned down the normal method of smashing him is by a flank or rear attack. In the past, artillery and infantry carried out the first of these operations and cavalry and artillery the



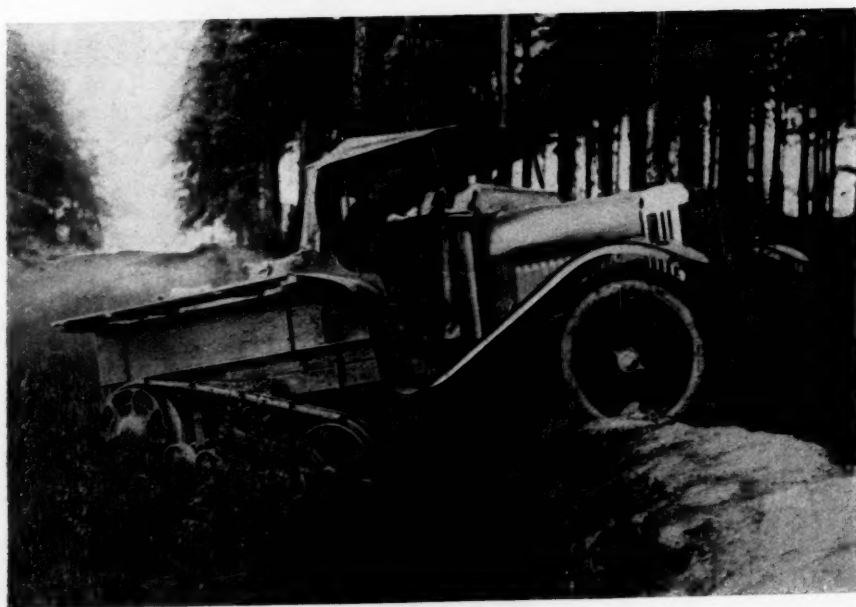
BRITISH VICKERS TANK.



AMERICAN EXPERIMENTAL TANK.



BRITISH GUY LORRY



BRITISH CROSSLEY-KEGRESSE LORRY.

second. The point to note is that infantry and guns constituted the base of cavalry action.

In the General Staff policy I can see no place for cavalry and, even if horses are moved in lorries, we know that cavalry to-day possesses very little smashing power. Is the Vickers tank, then, to take the place of cavalry? We can answer this question by examining its limitations.

It is 17 ft. long, it weighs nearly 10 tons, it has a speed of 16 miles p.h., and an engine of 80 h.p.; its radius of action is 120 miles, it can cross a trench 6 ft. wide and a vertical obstacle 3 ft. high.

From these limitations we learn that it will not cross wide trenches; that it is more easily stopped by obstacles than the old Mark V machine or even the original Mark I machine; that it is not likely to traverse difficult ground easily, but that on good going its speed is considerable. After a little thought, I think you will agree with me that it seems well suited to act as mechanical light cavalry against an enemy fixed by our guns and infantry.

Is this how it is being used? Apparently not, as a general rule, and to support this contention I will not set down my own views, but will quote from letters I have received from various officers who took part in last summer's training.

(1) *Vickers Tanks used like Mark V Tanks.*

Letter C. "The Vickers tank is still generally regarded as a Mark V—i.e., tasks set it involve pottering about 'dog-fighting' and a waste of its speed. . . ."

Letter D. "The outstanding feature . . . was that these Vickers tanks were used in the same way as the old Mark V's were used in the war. . . . Time and again one pointed out that a wide movement round a flank and an attack in reverse would not only be likely to bring about the desired result, but would also, perhaps, bring it about in a decisive manner. Such proposals, however, were not accepted because movements of this sort could not be said to be in close co-operation with the infantry. And it is apparently almost as much as a good reputation is worth to employ tanks on what may be called independent 'stunts.'"

Letter E. "The exercises served to confirm one's convictions as to how these machines should *not* be used rather than to suggest any modification of one's preconceived ideas of their proper rôle. The reason for this lay in the fact that little or no scope was afforded for making use of what is undeniably the outstanding characteristic of the light tank when compared with its predecessors—its extreme mobility. Tanks were used almost entirely for the comparatively local assistance of the infantry, and frontally at that. Hence, with their mobility so restricted, it was not surprising to find attacking tanks falling an easy prey to the well-sited anti-tank guns, and to the stationary, and carefully con-

ceased, tanks of the defence. Used in this way, the attacking tanks were in much the same plight as that of a 200-guinea hunter harnessed to a lawn-mower."

(2) *Tanks used as Mechanical Cavalry.*

If during the summer training it became apparent to many that the Vickers tank was, as I consider, misused, to this rule we find an exception—possibly there were several:

Letter E. "Simultaneously with the frontal attack two sections were sent round the enemy's left flank by way of Pirbright, a detour of 4½–5 miles, with the object of coming in behind the enemy on Emperor's Hill. This, the only attempt at anything of the sort, was extremely successful. Not only did the tanks get round quickly and easily but, by means of an extemporised R/T set fitted in one of the machines, were in communication with Company H.Q. and able to report their progress, using a simple code. On arrival at Emperor's Hill they caught a Section of the defender's tanks with the crew resting and smoking outside the machines. They were somewhat unfairly judged to have been knocked out by anti-tank guns before being able to do further damage."

(3) *The Helplessness of Infantry against Tanks.*

If, however, infantry are not closely supported by tanks, will not they be reduced to helplessness and be afraid to fight on ground suitable to tanks? Again I will quote the letters:

Letter E. "The 1st Guards Brigade had been warned to expect attack, accompanied by tanks, at dawn. The result was that at all hours throughout the night messages were received at Brigade H.Q. describing the movements of hostile tanks alleged to have been heard on various portions of the Brigade front. Actually there was no tank movement on the part of the attacking side which could possibly have been heard in the defenders' front line posts before about Z – 30 minutes at the earliest. If the probability of tank attack can have such an influence on the *morale* of the best trained infantry during peace-time training—infantry who, incidentally, were for the most part posted in an almost ideally 'tank-proof' position—it is interesting to speculate upon the influence which such a probability will exert upon *morale* under conditions of actual warfare."

Letter A. "The infantry seem to have grasped the idea of taking cover in woods against tanks. Often, however, the tank islands where they took refuge were so small as to afford no protection except against being actually run over. These small woods are death-traps against the fire-power of the tanks."

Letter B. "The complete helplessness of infantry against even a small number of tanks was well illustrated on the same day when one section of tanks attacked two battalions just after they had debouched from a wood to make a counter-attack. The two battalions were completely dispersed . . . it made one realise that, unless infantry battalions are provided with some sort of anti-tank weapon, they will have a feeling of helplessness, with consequent loss of *morale*, when enemy tanks are known to be operating against them."

(4) *Infantry require Tank Support.*

If infantry are helpless against tanks, several of these letter writers suggest that they must be supported by tanks. One writes as follows:—

Letter E. ". . . the time seems to be fast approaching, if it has not already arrived, when to launch infantry in the open against even comparatively hastily prepared defences has ceased to be a practicable proposition, despite artillery support on a really lavish scale.

"If this be so, it seems that another type of tank will be required which may be described as an 'infantry Tank.' It will have to be slow-moving because it will be required to move at infantry pace, and, because of this, it will have to be very heavily armoured, otherwise it will suffer from the enemy's anti-tank guns. It will, therefore, be very heavy . . . if such tanks prove inadequate for the task of assisting the infantry forward, will not the next step be to put the infantry themselves into armoured cross-country vehicles?"

The heavy tank suggested in this last quotation does not solve the difficulty as it runs counter to the General Staff policy—it will not move fast enough. The last paragraph, however, hits the mark. I believe that infantry will prove useless in the tank versus tank fight; they may prove useful after it is won or in mountains, swamps and forests. Further, that it is uneconomical to build heavy slow-moving machines to convoy obsolescent troops. Where infantry, cavalry and horse-drawn artillery can still be used, certainly let us think in terms of these arms; but where they cannot be used as economically as mechanically propelled weapons can, do not let us impede these weapons by mixing the two. I think that the future will see produced three main types of tanks, which in action will approximate fairly closely to battleships, cruisers and destroyers at sea.

The Vickers tank, in my opinion, is the beginning of the cruiser type; the dragon-hauled gun, of the land-battleship; and the armoured car, of the land-destroyer. I will say a few words about these last two.

The Dragon.—The dragon is a caterpillar tractor of 45/60-h.p. which can haul an 18-pdr. gun, its crew and about 150 rounds of ammunition at a maximum speed of 13 miles p.h. Two F. Bdes. R.A. and three Medium Batteries are now equipped with this tractor.

If it be granted that infantry is still the decisive arm in battle, even on ground which is suited to tank movement (and this is the main doctrine expounded in the Field Service Regulations), then the field gun required to support infantry against infantry may be one which is mounted on wheels. If, however, the tank is considered the decisive arm in areas in which it can move freely, then I contend that the wheel-mounted gun is an indifferent weapon.

A field gun can be moved by hauling or carrying it, and I am of opinion that the second of these two methods is the better. As regards the wheeled gun, such as the existing 18-pdr., I do not understand why it was necessary to build an expensive caterpillar tractor to haul it, when half-tracked lorries to-day exist which could easily be adapted to carry it. The argument against the half-tracked lorry is that it will not surmount as many obstacles as the dragon; this is perfectly true. But I cannot help feeling that it would have been wiser, for immediate needs, to have adopted a half-tracked lorry, a machine which is likely to become a commercial vehicle, and to have put every penny into the design of a mechanically mounted field gun: that is, an artillery tank. My reasons for this are as follow:—

A wheeled gun, whether hauled or carried, is an indifferent weapon in the tank versus tank battle. It requires an escort to protect it when on the move and in isolated positions and, because its crew are vulnerable to rifle bullets, in battle it has to operate at a distance from the infantry fight. As an anti-tank weapon it is relatively immobile; it cannot hunt tanks with ease, it can only sit up for them. Here is an extract from a letter I have received on the use of anti-tank guns during last summer's training:—

Letter F. "It struck me that to perform their duties satisfactorily . . . in country like Salisbury Plain, anti-tank guns must be allotted to the attacking battalions and should be often up with the leading company. It was astonishing to see how quickly armoured cars (and presumably fast tanks could do the same) could appear over a rise in front of the leading troops, run down the lines of groups formed by the latter and get away again before the anti-tank guns in rear could be communicated with."

As far as I can see, to obviate this difficulty, either the Vickers tanks will have to be deployed, as a screen, to protect all infantry movements over open country, or else field guns will have to be fixed on armoured mechanical mountings so that they can safely accompany the leading infantry or move ahead of them or on their flanks. Remove

the infantry, and these artillery tanks will be able to play a decisive part in the tank versus tank battle, whilst the dragon-hauled field gun will not.

I will now turn to the armoured car.

Armoured Cars.—For road work and in open plain land the armoured car, on account of its high speed and reliability, is at present even a more formidable weapon than the light tank. In field warfare it is likely to prove the terror of marching columns and a veritable plague to an army's line of communications. The Rolls-Royce armoured car, a magnificent machine, can, by road, travel 250 miles in a day, and on country such as Salisbury Plain normally it can move where it likes and at a speed of 20 miles per hour and over.

To protect infantry against this mechanical hornet is extremely difficult. On the line of march one writer tells me:—

Letter G. "The system of defence adopted corresponds to that of 'picqueting the heights' in mountain warfare. The advanced guard was responsible for blocking all lateral roads. This was done by dropping picquets . . ."

Another writer says:—

Letter H. "The marching columns adopted the plan of moving with the Field and Pack Artillery at the head of the column and dropping a gun at each road leading into the line of march . . . The armoured cars soon discovered that no local protection was given to the guns, and on two or three occasions a group of cars waited at a convenient corner, sent a party to 'stalk' the gun, while the remaining cars rushed past into the column."

The difficulty here displayed is a minor one when compared to the protection of the supply columns of a modern army, a difficulty which will be accentuated when armoured cars become half-track machines, which is the next step towards the creation of a destroyer tank—a machine which can attack armoured vehicles as well as unarmoured infantry and lorry columns.

MECHANICALISATION OF THE FRENCH ARMY.

Besides ourselves, the only armies which have taken up mechanicalisation seriously are the French and American. I will now deal with these in turn.

Two years ago I was in close touch with French ideas on mechanicalisation, but recently I have had no opportunity of bringing my information up to date.

In the summer of 1922, I had a conversation with the late General Buat, then C.G.S. of the French Army. His views were as follow:—

"We cannot hope to change the nature of our present army rapidly, and we have not the money to re-equip it, neither have we the experience. We must make the best of what we have

got; consequently, the whole of our training is based on the infantry arm. To support this arm we have our Renault tanks, and we are thinking of replacing them by heavily armoured machines of medium size. With this army we can hold back the Germans and behind it create a mechanical striking force. The General Staff realise this full well and they also realise that it is useless, in a short service army, attempting to teach our men how to fight a future war as well as a present one."

From this we may deduce that the French policy is quite logical. It is to make full use of existing means and simultaneously to experiment in order to produce future means. We consequently find the lorry, a vehicle which exists, being largely used as a tactical conveyance. In place of tractor-drawn field guns, we find lorry-carried guns, and to-day the French Army can concentrate some 1,000 lorry-carried guns on any section of their frontier in a few hours.

The French General Staff also realises that the most economical way of creating a mechanical army is, first, to create a roadless vehicle industry. If caterpillar machines can be turned to real commercial use, not only will immense experience be gained, but, at any moment, the manufactories concerned can be placed on a war footing. It is for this reason that such companies as the Renault and Citroën have so strong a military backing. The first has produced a six-wheeled machine and the second a half-track car.

MECHANICALISATION OF THE AMERICAN ARMY.

The military problems of every country are influenced by national problems and conditions. Our own frontiers are immune from land attack and what we require is a military fire-engine; that is, an army which can move rapidly from this country and immediately extinguish any conflagration. The French army has to prepare for a European war and has not the money to change its equipment rapidly.

Now, turning to the American Army, we find that it is faced by no serious military problem. America cannot seriously be attacked by land, sea or air; she is self-contained and possesses huge and ever-growing mechanical industries.

When at Washington, a few months back, I gathered from the American General Staff that the eventual necessity of mechanicalisation was fully realised: that infantry would have to be carried, guns of all calibres mounted on tracked vehicles, and tanks of various types used. They were not as yet prepared to say what they required and for political reasons money was short.

A considerable number of experimental machines have been built and are being tested out, but the lack of national interest in the Army must, I consider, delay its mechanicalisation for some time. Further, cavalry are still of great use on the Mexican border, and a cavalry outlook, rather than a mechanical one, appears to me to dominate the American General Staff.

MECHANICALISATION OF OTHER FOREIGN ARMIES.

As regards other foreign countries, practically all of them are thinking, and some very vaguely, of mechanicalisation. The Italians are mechanicalising their medium artillery and have carried out experiments with a new formation called a "Swift Division," which is somewhat on the lines of the French "Light Division." Two types of tanks—a heavy and a light—have been constructed by the Fiat Company; but they, I believe, are not considered of much use, as Italy is protected by a mountain frontier which is unsuitable for tanks.

Russian text-books refer to elaborate armoured formations containing armoured trains, armoured cars, light, medium, destroyer, reconnaissance, heavy, landing, searchlight and bridging tanks, etc., but I do not think that at present this formidable array need be taken seriously. Nevertheless, there is no saying what an autocratic country like Russia may not do.

The Germans, by the Treaty of Versailles, are allowed 150 armoured cars, but no tanks.

The Japanese have no Tank Corps and practically no mechanical industries in their country. They rely almost entirely on vehicles of American manufacture. In these circumstances it is unlikely that Japan for some time will be able to mechanicalise her army.

Of the remaining nations, such as the Belgians, Czechs, Rumanians, Swiss, Spaniards, Chilians, etc., few have so far carried out any experimental work. Most are thinking of starting tank units and, from the intense interest displayed by all foreign military attachés in the Vickers Tank, if political considerations will allow it, we could undoubtedly establish a considerable tank industry in this country. If we do not obtain control of the foreign tank market, the French most certainly will.

THE CIVIL FOUNDATIONS OF TACTICAL POWER.

Thus far I have dealt with the first half of the problem which faces the General Staff—the military half; now I will turn to the second—the civil half, which is even more important.

Earlier in this lecture I told you that, in the past, cavalry mobility was developed from infantry stability; in other words, infantry supplied cavalry with a base of action. Similarly, in war, the grand tactical base of action is the nation itself—its resources and industries. If this base can supply tactical needs immediately after the outbreak of war an immense advantage is gained. For example, an army equipped with magnificent machines, unless it wins the war in one decisive battle, will be most seriously handicapped should it be unable immediately to replace its lost and worn out equipment; for, as we know, it takes about twelve months to establish a war industry on a productive footing. An army equipped with machines which can rapidly be replaced has

great staying power and this power depends entirely on how far military demands and civil supply can be harmonised.

For example, the other day I saw a very powerful tractor called the Hathi, a machine now being experimented with in our Army. It put up a magnificent performance, but its cost is high. Now such a vehicle as this is not likely to possess an extensive commercial use; therefore, unless the General Staff consider most carefully the second half of the problem as well as the first half, when war breaks out the Army may find itself seriously handicapped.

The French General Staff clearly understand the value of establishing a solid commercial base. Take, for instance, the Citroën-Kegresse car and the Renault six-wheel car. The French Government heavily subsidised both the Citroën and Renault expeditions across the Sahara, not to enrich the Citroën and Renault Companies, but to foster industries of the highest military importance. Only the other day a Citroën-Kegresse car was driven from Quetta *via* Chaman, Kandahar and Herat to Meshed in eleven and a half days, surmounting all obstacles with ease. Two schemes are now on foot—the first to establish a Citroën-Kegresse two-day-a-week passenger service across the Sahara desert to Timbuctoo, and the second, by another French firm, to run tracked cars from Konakry in French Guinea across Central Africa to Jibuti in Somaliland. These cars are to run without petrol and will burn palm oil, nut oil and naphtha, because these materials can be obtained *en route*.

We, in this country, have fitted a few Crossley and Burford lorries with Kegresse tracks and these machines have proved themselves very useful vehicles; but unless we buy the rights of this patent, or it is manufactured in this country, this will not help us to foster British industry.

We have in this country an excellent half-track lorry—the Guy roadless 1 tonner. The other day, running from Hounslow to Aldershot, it averaged 52.2 ton miles per gallon; its tracks do not skid when circling round; it is not only an efficient military, but a sound commercial supply vehicle.

It is on vehicles of this nature, especially if they are produced in this country, that attention should be concentrated. Why cannot we run a Guy roadless lorry from Quetta to Meshed or from Capetown to Cairo? This is the way to stimulate civil interest in commercial roadless vehicles. This is the first step in founding mechanical tactical power and the most important step.

To summarise: first, let us make quite sure of our tactical ideas; secondly, let us make certain what our industrial resources are and what they should be, in order to supply us during war, and then only let us determine on our scheme of mechanicalisation. And to my mind, the best scheme at present is one which will foster our home industries, for whoever we fight, Great Britain must be our administrative base of supply, for this country is the war stomach of the Empire.

DISCUSSION.

CAPTAIN E. ALTHAM, C.B., R.N.: I think it is rather presumptuous for the Navy to get up and speak first on the subject of tanks

COLONEL FULLER: I think it would be excellent, because it was the Navy who gave us the tank.

CAPTAIN ALTHAM: The lecturer has referred to the battleship, the cruiser and the destroyer types of tanks, and I suggest that there is a very real and close association between the ship of the land and the ship of the sea. It was my good fortune to go through a course at the Artillery School at Lark Hill, during which I also went down to Lulworth and saw something of the tank under practical conditions; and one could not help being struck by the close analogy that would seem to exist between naval gunnery and tank gunnery. First of all there is the simple question of ammunition. The Army is, for the first time, I take it, confronted with the problem of the attack of armour. We in the Navy during the War had exactly the converse problem. We had to get ammunition suitable for shore targets which were not armoured, such as bodies of troops in the open. This is a matter which complicates the supply of ammunition in action. Another problem for the Army is that, for the first time, not only has fire to be directed at targets moving at a high rate of speed, but the gun itself is mounted on a platform which is moving rapidly. Those are two of the associations which I suggest exist between the land ship and the ship of the sea. Now, the lecturer also alluded to and rather expressed his preference for the mechanically-mounted gun. Here, again, I suggest we get a very close association or comparison. I ventured to remark at the Artillery School about two years ago that in a war of movement, which is the land war of the future, I take it, a gun which was planted down in the old-fashioned way, and which required a team of horses or a "dragon" to move it bodily, and a large crew of men even to shift the trail—and which, at that time certainly, had only very limited independent training—would be very much like a warship with her engines broken down and which could only fight on one broadside, trying to engage a highly mobile fleet circling around her. I still suggest this comparison as an argument in support of Colonel Fuller's contention as to the advantages of the mechanically-mounted gun, and the necessity for all-round training.

Now, to turn to the tactical side, the Navy is very much interested in the question of the development of the amphibious tank. Colonel Fuller has pictured the British Army as setting forth like a fire-engine to quell a fire. Well, to reach our enemies we usually have to cross the sea, so it will depend very much on how the Navy puts the fire engine ashore whether the latter will be successful when it gets there. It may be a simple matter of escorting troopships into port. On the other hand, it may be a case of having to attack under the conditions of an opposed landing. Soldiers have told me that they would be very loth ever again to undertake an operation like the Dardanelles—that is to say, to land in the open against an enemy with modern machine guns, and that for such landings they would essentially require the use of tanks to head the troops. In 1917 we tried to solve this problem in a crude way on the Belgian coast, and many of you, no doubt, have read in Admiral Bacon's book about the intention to use pontoons, at the head of each of which would have been three tanks. These, of course, would have been land tanks, and the system was only suitable for a short sea journey, and for that particular locality. The pontoons were like huge floating piers with a couple of ships pushing them ahead until they grounded on the beach and the tanks could walk

ashore. The weak point was that if the head of a pontoon had been hit by a shell, the tanks would, in all probability, have been unable to get ashore. The Navy, therefore, is very interested indeed in the problem of how to put tanks ashore. If the Royal Tank Corps can evolve a tank which can swim from some way out at sea in what we should call a "bit of a lop," at least, then, the problem would be enormously simplified. As long as it is necessary to ferry the distance between a comparatively deep-draught ship, big enough to carry heavy tanks, and the shore, the problem remains exceedingly complicated. I submit that this is a tactical aspect of the employment of tanks of considerable importance to both Services. I hope, therefore, that the Royal Navy will continue to be very closely associated with the Royal Tank Corps in seeking the solution of such problems.

CAPTAIN LIDDELL-HART: I am rather reluctant to get up when so many more distinguished officers are present, but perhaps one or two comments of mine on the recent manoeuvres, or rather divisional training, might not be without interest, having had the advantage, as a military correspondent, of a roving commission. I came away with a deep impression of the foresight shown in improving the mobility of the Army and of the development of new means of warfare, particularly R.T. and aircraft. One feature, however, was less impressive—the tactical employment of the tanks, which devolved on the subordinate commanders. Too often their advantages were thrown away in desultory forays, being used rather as a side-show than as a vital part of the general plan; and as a consequence, the ground on which they were used was not always suitable to their limitations. Though they were not tied as closely as the war-time tank to co-operation with infantry, they were in fairly close co-operation and when used on ground suitable for them they outran the infantry, whereas when used on unsuitable ground the reverse applied. Now, that is a very big problem for the future—how we are to effect co-operation; because the close co-operation does not seem a success. The speed of the modern tank has been increased and the obstacle-crossing capacity decreased—facts which make it necessary for us to re-cast our ideas. The lecturer seems, to me at least, to have found the right solution—that the tanks should be used for the manoeuvre part of the tactical function of *fixing and decisive manoeuvre*, which has ever been the key formula of tactics. But however valuable an idea, before accepting it and staking our military security on it, we need to test it; and how, may I ask the lecturer, does he propose that the truth of his idea should be tested? In a recent article I suggested that some sort of experimental formation, or, again, a tactical research department working in conjunction with the former, should be formed, and if we are to advance and adapt our tactics to new inventions we need not only a branch to think out, but some picked body of troops who can try out these tactical ideas. The recent manoeuvres did not seem sufficient because every commander used his own methods, and the result was a very haphazard use of tanks. In the recent training, again, the limitations of the present tank were apparent to an observer; and the Aldershot Command's clever method of tank-proof localities, an idea which seemed to me most successful, should assure the continued use of infantry. But on more normal ground the tank was the master, though the fact was apt to be obscured because frequently, when no umpires were about, lines of infantry were seen walking along unconcernedly with "enemy" tanks in amongst them. In mimic warfare that was possible, but in real warfare there would have been swathes of dead. Such were some impressions of the recent training so far as they may interest you, and if the lecturer would answer that point, as to how he proposes that the truth of his tactical ideas should be tested—and they seem on the surface to be very sound—I should be grateful.

COLONEL FULLER, in reply, said: I am in entire agreement with Captain Altham; I put up the idea of an amphibious machine in December, 1917, and I can see no great difficulty in building such a machine. The problem is a fairly simple one, for either a tank can be made to float or a boat can be made to crawl; the latter method is, I think, the easier to begin with. During the war the Italians fitted tracks to a submarine, or a C.M.B., I forget now which, which got over the Pola boom. Before the War, I believe, a small submersible vessel fitted with tracks was built in America for examining the bottom of Lake Superior. Since the War there has been much talk about amphibious tanks, and really, if we want one, all we need do is to put our hand in our pocket and go to Messrs. Vickers or any large firm and ask them to build us one. I am glad that this question has been mentioned, because the amphibious tank is really an essential to efficient landing operations. Each year the three Staff Colleges meet at Camberley for a combined exercise and each year one of the recommendations is an amphibious tank. We shall meet again next March and we shall once again ask for this machine.

Now as to Captain Liddell-Hart's questions. I am glad that he has been able to corroborate my views since he was an eye-witness of last summer's training. He has asked me how I suggest carrying out my ideas as to the use of tanks. I have very definite views on this point and had included them in this lecture, but the War Office cut them out; therefore, I feel obliged to remain silent. I am sure, however, that Captain Liddell-Hart could himself provide us with a very interesting article on this subject in the *Morning Post*.

THE CHAIRMAN: Ladies and Gentlemen, after the very complete and interesting discourse which Colonel Fuller has given us within the limits selected by him—the tactical use of track vehicles, or tanks—there is little for me to add. First of all, I cannot help feeling that the tank is not really regarded as a side-show, as was suggested by Captain Liddell-Hart. The truth is that it has at last come to be greatly feared, but uncertainty as to its power and exact place in the operation picture may be responsible for hesitation and indecision as to its employment in training manoeuvres. But if it is to be so regarded by any, it is only another manifestation of that mentality which did not appreciate the value of the machine-gun until we had the bitter experience of running up against it in the hands of an enemy who were artists in its use.

Broadly, the burden of Colonel Fuller's lecture can be given in three words: Think Tank-tactically. And this, at the present stage of evolution in warfare, is what we have to do, whether we like it or not, and whatever our preconceived notions or prejudices. Time, work and money have been put into the development of the new arm; but it appears—I do not speak from first-hand knowledge, but from what I have gleaned and what we have heard to-day—that having got so far, we have not yet attuned our minds to envisage operations in terms of its potentialities. We are, indeed, still inclined to look upon war on land primarily in terms of Cavalry, Artillery, Engineers and Infantry, though not necessarily in that order. And even eight years after the birth of the new arm we do not apparently realise what, in certain directions, its appearance on the scene implies. It is, nevertheless, a most important and intriguing factor, owing to its still unknown elements.

To put a case in an extreme light, or to reduce it to absurdity, is sometimes helpful. If, for example, we assume that a force of all arms, but without tanks, acting in country where such machines can function, meets another force of all arms well equipped with tanks, such as those mentioned by Colonel Fuller, the problem arises—what can it do? I am not going to attempt to answer this

question, which has been so cogently—if indirectly—suggested by the lecturer. The converse extreme and various intermediate conditions are also interesting to study. And the solution depends on what tanks are, or will be, capable of doing. This has not yet been ascertained, but is far more than the very special *role* for which they were originally conceived and created. We have heard a quotation from a letter in which the writer stated his opinion that to employ the existing type of machine as it is used in training is comparable to the harnessing of a two hundred-guinea hunter to a lawn-mower. This reminds me of a somewhat similar misconception and misapplication of which I was told during the War. I cannot vouch for the truth of the information, but it was to the effect that on one occasion in Palestine one tank was escorted by a detachment of the Camel Corps sent out to reconnoitre. My comment—that it was equivalent to sending out a fighting armadillo escorted by a dish of poached eggs—caused some merriment.

Colonel Fuller rightly accentuated the helplessness of infantry as such in the face of tanks. They can, in fact, do nothing, though an individual soldier may, with luck, blow up one. The only thing that can help the infantry is the presence, or the speedy arrival on the scene, of the one thing the tank has to fear, *i.e.*, the gun. This leads up to the statement that the answer to the tank is a tank, which is now, I believe, a catch-phrase. Such phrases are proverbially misleading, and therefore dangerous. This one is as true now as it was in January, 1916, when it was first enunciated. The arguments in support of it are obvious and well known, and I will not repeat them. Nevertheless, the bringing up of guns does not, of course, necessarily postulate that they should be transported by tanks. It may be possible for infantry to be accompanied by anti-tank artillery conveyed in other ways, and experiments in this direction are being carried out. But, when tanks are fighting each other there is no place in the picture for infantry equipped as in the past, and still less for the cavalry. The opportunity for infantry, as the lecturer said, comes later. And advocacy of the employment of machines as an aid to the man does not imply any deprecation of the value of the infantry soldier in the ultimate decision. It is an endeavour to give him the best chance to exercise the powers which he does possess.

One point, to which the lecturer is no doubt quite alive, though he did not allude to it, perhaps as being outside his immediate scope, was the economic side of the fighting machine as apart from the merely transport machine. Over and above its special attribute of saving life in action it tends at all times to the economy of force, in other words, the saving of money. The most costly item in the maintenance of an army is that of *personnel*, which calls for daily pay, pensions, hospitals, etc. This is especially so in the case of the British Army, which has to serve in many climates. The more that the number of men on the pay-roll can be reduced the less is the cost of the force; and it may be, if not already, possible without loss of efficiency to substitute machines for a certain proportion of the men formerly found necessary, especially in countries where the troops have to carry out protective semi-police duties against a populace of inferior fighting power and armament. Money spent in research in this direction will, I think, result in great eventual economy.

In regard to Captain Liddell-Hart's remarks as to the necessity for the creation of a military body or department to think out developments and carry out experiments, I do not know exactly what is being done. I agree that there should be some such branch or section of the nature of a futurity organisation, which would assist to the exploitation of new devices and help to bring tactical ideas in accord with the practical limitations. But it should not exist for the question

of tank warfare alone. And its members should be assured of continuity in their activities, and freed from current and routine work, so that they can apply all their energies to studying, analysing, and ascertaining tendencies. It is not seldom said by technical experts that "If the General Staff will tell us what they want, we will give it to them." But this matter is not quite so simple. It tends to work in a circle. No body of men can formulate rational demands for the future without some accurate knowledge of the latest developments and tendencies, and some guidance as to what is feasible; and this implies that they must be kept in continuous touch with technical and scientific progress by those conducting research. They will then be able, to some extent, to appreciate beforehand what is likely to happen and to take the necessary measures. Before new material devices are adopted and produced they should be tried practically, as far as possible under war conditions, by a special organisation composed of those who will eventually use them and specialists.

I am afraid I have detained you rather long, but the subject which has been brought before us to-day is one which demands on the part of those responsible for our readiness for war at least as much clear thinking and instructed imagination as any other before us. I have great pleasure in proposing a hearty vote of thanks to Colonel Fuller, who by his able exposition has told us of things as they are, and made us visualise something of what may be.

The vote of thanks was carried by acclamation.

MAJOR-GENERAL H. F. THUILLIER, C.B., C.M.G., late R.E.: Before we disperse will you allow me on behalf of the Royal United Service Institution, and on your behalf also, if I may, to express our thanks to the Chairman, General Sir Ernest Swinton, for his kindness in coming here and presiding. We all know what a very important part he took himself in the introduction of the tank idea, and also in the production of the first tanks, and we know that when we have been listening to what he has said in his summing-up of the various arguments to which we have listened, we have had the pleasure of hearing one who has got a very original mind himself, and has thought deeply on and has great experience of the subject. If you agree with me will you kindly express your thanks to General Swinton in the usual way.

The vote of thanks to the Chairman was carried by acclamation.

COMMERCIAL TRACK VEHICLES : THEIR DEVELOPMENT AND PROVISION FOR MILITARY PURPOSES.

By MAJOR G. C. G. BLUNT, D.S.O., O.B.E., A.M.I.Mech.E.,
R.A.S.C.

IN his interesting lecture on "Progress in the Mechanicalisation of Modern Armies," Colonel Fuller prefaced his remarks by informing his audience that he intended to restrict himself to the subject from the point of view of the Track Vehicle; and at the conclusion he summarised his points with the statement that the "best scheme is one which will foster our home industries."

In the course of his lecture he referred to :—

- (1) the mobility, speed and radius of action of the Tank, the Dragon and the Armoured Car;
- (2) the commercial development (assisted by the Government) in French Colonial possessions of the Kegresse and Renault machines, and
- (3) the Crossley and Burford machines with the Kegresse attachment, and the Guy roadless tractor.

One gathered that the vehicles referred to under (a) were considered to be only partially satisfactory by reason of the limitations of the tactical powers of the tank, by the fact that the Dragon drew a gun instead of carrying it, and by the armoured car being a *wheeled* machine instead of a partial track machine.

Having thus expressed an opinion of the shortcomings of the three types of fighting vehicles in our Army, and having shown how the French by means of Government financial and subsidy assistance are endeavouring to develop commercially their cross-country track machines, it was stated that the best scheme to obtain the type of tracked vehicle to meet the needs of a modern army is to "foster home industries" and produce a tracked *commercial* machine.

It is the *commercial* aspect of the problem that I desire to put before your readers.

The motor engineering world in its progress and development has far greater resources than we can contemplate under the best conditions. Such development is continuous and progressive, though at times it may be considered conservative and somewhat slow, for commercial users cannot afford, as we can on some occasions, to look beyond what is reasonably assured as a practical success from a business point of view.

The general aims and desires of such users are not radically different from our own. They are constantly seeking increase in mobility, in reliability, and in the efficiency of their vehicles for the transport of goods.

But, on the other hand, the ordinary commercial load or passenger carrying vehicle may not be suitable for military service in such constructional details as the road clearance, turning circle, gear ratio, cooling radiating system, and reserve of engine power for continuous running over soft ground.

Owing to the financial and other restrictions which prevent our maintaining, either in service or in mobilisation store, during peace time, the whole of the vehicles required to equip our expeditionary force, we must always on the outbreak of war be dependent upon obtaining the greater portion of our requirements from commercial resources. Consequently the type of vehicle with which units will be equipped on mobilisation must necessarily be that which then predominates in civilian life, and which at the same time most nearly conforms to active service requirements. Even though our work in study and design should devise a suitable vehicle which would fulfil our needs in an ideal fashion in any theatre of war, it is extremely doubtful whether we could afford to obtain its production in sufficient numbers in time of peace.

As a business proposition, no engineer or motor manufacturer would be likely to incur the initial outlay and great expenditure in designing and constructing a vehicle of an unusual type, unless he is first of all convinced that its production would be a commercial success, and that it would be taken up by ordinary users in sufficiently large numbers to compensate and recompense him for at least his capital outlay. Having this aspect in view, we can but endeavour in peace time to influence both the manufacturer and the user to modify existing types of vehicle in commercial life, so that they shall eventually conform as nearly as possible to the type of vehicle whose salient features are manifestly advantageous from a military point of view, and do not adversely affect their everyday utility. The adaptation of commercially operated vehicles for use on active service is the problem we are faced with, but the importance of standardising such vehicles and of reducing the number of types and makes in an army on active service is an absolute imperative necessity.

To wage war on scientific principles, it is essential (though ideal) to standardise our mechanically-propelled vehicles, and if preparations for war are regarded as an insurance against its existence, it is not unreasonable nor financially unsound to subsidise in peace on such a scale as will ensure adequate standardisation in war. The saving in *personnel*, simplicity in training, economy in provision, in operation and maintenance, and the rapidity of mobilisation are all too obvious to need explanation or amplification.

The method by which standardisation can be ensured in peace time is by means of a subsidy scheme—that is, by laying down a specification

of "design" and "performance," and by inviting motor-manufacturers to build vehicles to such a specification—vehicles sold to commercial users conforming to this specification can then be enrolled under the scheme, and the owners or firms operating such vehicles should receive an annual or half-yearly payment so long as the vehicles are maintained in a mechanically efficient running condition.

It is essential, however, that the specification should aim at designing a vehicle which is suitable for trade, compares favourably in price with other vehicles in everyday use, and, at the same time, possesses certain features necessary from a military aspect, but which do not seriously detract from its selling value.

The caterpillar type of track vehicle is, as yet, practically non-existent as a purely goods carrying commercial proposition in this country.

It is essentially a cross-country type of vehicle and it might be urged that if this type were developed it could be used for agricultural purposes.

No agricultural tractor of any description has, however, made any appreciable headway in this country, except perhaps in certain more or less isolated districts, where local conditions are particularly favourable; but during the past two years farm tractors have been rapidly falling into disuse. This fact may be attributed to the following causes:—

The market for second-hand and new ones is practically non-existent. On all sides, farmers declare that the operating of such tractors does not produce the economy anticipated, owing to the difficulty of obtaining, at a reasonable wage, suitable men who possess a technical aptitude for the maintenance of the internal combustion engine vehicle and its electrical equipment, and who also have a knowledge of cultivation and farm practice.

Further, owing to the delays which take place when breakdowns occur, the whole year's crop and produce may be ruined whilst the tractor is awaiting repairs.

This form of tractor is, also, not generally suited to road work, and can, at present, only travel at low speeds up to about five miles an hour, and thus it lacks mobility. The variable weather and small farms and fields of this country will always militate against the extensive use of the agricultural tractor in its present design.

Under the conditions ruling in the agricultural industry to-day, the average farmer's opinion that horses are cheaper than tractors is due to:—

- (1) The small percentage of land under cultivation, which does not justify the use of a tractor on an average farm.
- (2) Horses can be utilised for both working and breeding purposes.
- (3) Food for their maintenance is a farm product.
- (4) Young stock improves in value each year, and

- (5) The average farmer is not an engineer, but is competent to locate and remedy trouble with his horses without having to rely upon paid expert advice.

The Ministry of Agriculture recently reported that the tendency of farmers to replace tractors by horses is very marked.

The reasons for the reversion are the low price of horses (with which farms are now well stocked) and of keep, combined with the increased cost of labour; whilst tractors have been found expensive to run and keep in repair.

As a goods-carrying vehicle, the agricultural type of machine in its present design, low speed and lack of suitable springing, is unlikely to compete with any commercial enterprise where road work is involved and we cannot, therefore, count on this type of vehicle being manufactured and produced by British firms in any large or appreciable number—at any rate for some years to come.

With the private ownership of land, with the consequential damage and destruction to hedges, fences, ditches and other forms of boundary limitations, the employment of a cross country track vehicle for ordinary commercial transport use would be very severely restricted, and one cannot conceive that any sort of legislation would ever be introduced to permit of such cross-country "right of way."

As regards the use of track vehicles on the road, their speed and radius of action would have to compare favourably with the present wheeled vehicle before the commercial world could be induced to adopt them for ordinary transport purposes. The wear and tear of the endless tracks, the cost of their repair and replacement, and the facility and rapidity with which a broken or damaged track can be renewed or put together again, would all have to be weighed in the balance against the simplicity in the manipulation of the wheels of a lorry or similarly designed vehicle.

The size of a vehicle is at present restricted in relation to its total weight, and the weight is limited according to the capacity of the bridges to carry certain maximum loads, and to the various Motor Car and Highways Acts dealing with the use of road transport.

In a country like England, where metalled roads abound, and where wheeled goods-carrying vehicles to the number of nearly 175,000 are daily employed for commercial and private use, it scarcely seems likely that the track vehicle will ever replace the wheeled vehicle for general use on the roads; nor, under present conditions, does there appear to be any possible way in which the demand can be created to produce this particular type of vehicle commercially.

In the case of tanks, which have no counterpart outside the Service, we have to provide ourselves in peace time with at any rate a portion of our war equipment. So also in the case of other special technical vehicles, it may be necessary, in the absence of a suitable type in use in commercial life, to do likewise, and to equip ourselves in peace with special types of vehicle suitable for the purpose of drawing bridging

and pontoon equipment, mounted on trailers, and medium artillery, guns, howitzers, etc.

It remains to be seen, however, whether the very type of vehicle lately evolved, *i.e.*—the Hahti four-wheeled drive tractor (of which we were shown a photograph on the screen)—will not adequately suit the bill.

This wheeled tractor, which has been manufactured to W.D. design in conjunction with one of the leading firms in the country, is expected by that firm to have great commercial possibilities, and it is intended so to develop it, both in this country and abroad. It is entirely British made. It is light in weight (being under five tons), is fitted with large giant pneumatic tyres, which make it acceptable in our Colonies and Dominions; it is powerful and has a truly remarkable speed, mobility, and radius of action both on and off the road, which render it particularly suitable for use as an armoured car.

But, most important of all, from the commercial point of view, its cost will compare very favourably with all other types of foreign cross-country track and wheeled vehicles of equal power and capacity.

There is, therefore, an actual potential commercial future for this British machine, which is certainly more than can be claimed for the various types of track machines now being produced in this country.

There are, however, other types of vehicles which we require in a modern equipped army, and "to foster home industries" by encouraging the commercial production of such vehicles we must induce manufacturers at home to ascertain the requirements of our Dominions, Colonies and Dependencies.

Further by Colonial Legislation and the placing of a protective duty on *foreign* (*i.e.*, non-British) manufactured vehicles entering our colonial possessions, we can thereby encourage home manufacturers to meet the demand which progress and development in the design and use of such vehicles will assuredly bring about. Until such time as this demand for cross-country vehicles for use commercially in the British Empire can be created, it may be assumed that we shall be dependent on "special" military machines, limited in numbers by the peace establishments of units.

On the other hand, so soon as such vehicles are in commercial production, the problem of provision, from the military aspect, will be to a very great extent solved, for the initial cost of experimental work in design and the capital outlay on first manufacture will have been overcome. The expense of equipping units in peace time will, therefore, be greatly reduced, whilst on mobilisation, the shortage in numbers required to complete to scale will probably be met, partly by stocks in manufacturers' hands and partly by the completion of assemblies under construction. Further, the continued production towards equipping the balance of units will not present serious difficulties, seeing that the initial stages of manufacture,—*i.e.*, the designs, plant,

machinery and material for the purpose of output—will be practically a *fait accompli*.

To briefly summarise the foregoing :—

It is evident that if the Army is to be equipped with the type of vehicle suitable for use in any theatre of war, *at an outlay consistent with our financial resources*, we must be either partially or wholly dependent on acquiring our mechanical transport equipment from commercial users on the outbreak of war.

The commercial user, however, can only be persuaded and cannot be forced. Repressive legislation against undesirable types of vehicles might possibly only tend to defeat the object in view, though easier taxation of the type of vehicle most nearly conforming to that required for military purposes should encourage the manufacture and production of that type.

To encourage the pneumatic-tyred vehicle, the multi-axled vehicle, and the track vehicle, and to restrict the speed and radius of action of the solid-tyred four-wheeled vehicles, would be a step in the right direction.

The development of the track or caterpillar type of tractor and the rubber-tyred multiwheeler in our Colonial possessions is a matter for the Crown Agents for the Colonies, for the "Commercial Diplomatic Service" (which is the Department of the Board of Trade dealing with our Overseas Trade), and for the Parliaments of our Overseas Dominions and Dependencies.

By means of organised trials and expeditions, both in this country and on the lines of the French Colonial trials, cinematography, lectures and such like propaganda, both at home and in our Dominions and Colonies, much can be done to foster home industries and encourage manufacturers to develop cross-country vehicles, and to stimulate the interest of British Colonial syndicates, haulage and other business firms in the vast scope of utility of such vehicles for all sorts and conditions of agricultural, forestry, mining, farming, ranching and other industrial activities throughout the civilised and semi-civilised world.

The manufacture and production for export purposes of cross-country vehicles will not only prove of enormous value in the opening up and development of trade in our foreign and colonial possessions, but will in no small measure solve the military transport problem of the Mother Country in the event of her being called upon to give assistance to any of her possessions on the outbreak of a Near or Far Eastern War.

THE MECHANICALISED DIVISION OF THE FRENCH ARMY.

*Summary of an Article by General Boullaire in the "Revue Militaire
Générale" for April, 1924.*

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I. EVOLUTION.

THE problem of cross-country movement was only partially solved during the last war by the caterpillar track. Tractors and vehicles of the Holt type destroy the roads, and, inversely, the roads injure the tracks; their speed is very limited, they are expensive to build, and belong to a type not yet manufactured commercially on a large scale.

The Citroën Kegresse type of flexible track vehicle, which can travel at ordinary touring speed on the road without damage to road or vehicle, and can—as in the crossing of the Sahara—average $12\frac{1}{2}$ miles an hour across country, has been perfected at a most opportune moment from a military point of view. The magnitude and complexity of operations in modern warfare force a commander to attempt movements of ever-increasing scope; the horse is becoming an inadequate medium for their execution, and may eventually be totally excluded from the battlefield on account of his excessive vulnerability. Hence mechanical transport must intervene, when rapid movements over long distances are required; a certain amount has already been done in this direction, but owing to the stabilisation of the front, movements have mainly been limited to the transfer of reserves under conditions of security that stabilisation afforded, and the infantry and their guns and transport had to be moved separately. This involved engaging the infantry under peculiarly disadvantageous conditions, as in 1918, or waiting to effect a re-grouping with consequent loss of the advantage gained by a rapid move. When the front was broken, the extreme vulnerability of the long columns made it necessary to *debuss* at a considerable distance from the firing line and to fix preliminary rendezvous for the columns. The action of the 4th Cavalry Division on the Avre in 1918 and the 1st Cavalry Corps on the Marne and the 2nd Cavalry Corps on the Ourcq may be said to have anticipated to some extent the "*manceuvre par automobile*" of the future, since the cavalry did in fact act as advanced guard to and cover the deployment of the reserves of infantry transported in lorries. Similarly in 1914, during the "Race to the Sea," armoured cars and infantry support battalions carried in lorries were attached to the cavalry; from this idea of strengthening the fire-power of the cavalry originated the conception of the combined employment of

mounted and automobile elements, which gradually forced itself upon the higher command. In 1918 a fourth (dismounted) division was created in the cavalry corps; the transport of this division in lorries had been planned out and, as its *cadres* were specially trained for the work, they would probably have proved extremely useful in the final stages of the campaign, had not shortage of effectives led to their premature employment for other purposes.

After the war experiments were made with a view to finding the correct composition of covering detachments for a mechanically transported force and naturally the first attempts were made with mobile units already in existence, *i.e.*, cyclists, cavalry, armoured cars, "artillerie portée" (carried in lorries) and lorries temporarily grouped under a single command. The first three were entrusted with the duty of scouting and covering the march and deployment of the troops transported. The experiment was not very successful; the units employed were strange to one another and had no cohesion and the cavalry and cyclists only just kept their distance ahead of the columns at the price of disregarding their tactical duties. (A properly constituted light (cavalry) division was not then available.)

A large cavalry formation can cover from 50 to 60 miles a day and can at the same time carry out reconnaissance and provide for security, on the condition that the reconnaissance and security detachments are sufficiently numerous to search the ground in a straightforward movement without wasting time in lateral movements. Such an expenditure of effort implies the employment of different units on alternate days and the provision of fresh troops for night outpost duty (the cyclist battalion appears suitable). These considerations limit the breadth of the zone to be allotted to a light (cavalry) division, co-operating with an automobile column, to about 6 miles, which implies that in an operation involving the use of three or more infantry divisions it would be necessary to constitute a cavalry corps.

The automobile columns would have a greater radius of action than 60 miles and hence the cavalry would have to be sufficiently far ahead to avoid being prematurely caught up. As long as the opposing forces retain freedom of movement this condition is automatically fulfilled since the cavalry are naturally on a flank, a full day's march ahead of the general reserve, and in consequence well placed to carry out their covering task.

A difficult point in the problem is the co-ordination of the movements of the cavalry and the lorries; the former can only do useful work by day, whilst night favours the latter by concealing its movements. Co-ordination is relatively easy at a distance from the enemy, but more difficult in hostile country, in view of the wide interval between the two elements of the force. It is suggested that the cavalry might well operate in two *échelons*, leaving its outposts in position during part of the day and thus giving additional security to the force covered.

Combined operations are therefore possible on condition that sufficient force is employed. The only type of operation possible to-day is that hitherto considered; but conditions are changing rapidly, and already sufficient mechanical progress has been made to render possible the study of the wider aspects of the problem.

2. THE PROBLEM OF SECURITY.

Every combination, strategic or tactical, whether employed before, during, or after battle with the object of gaining the initiative, holding the enemy and defeating him, comes under one of three headings—

- (i) An exterior outflanking manœuvre.
- (ii) An interior manœuvre to parry an enemy thrust, or to make a counter-stroke.
- (iii) A manœuvre to exploit success.

In the first and the third instances it is a case of taking the initiative, in the second of re-acting to the enemy's initiative. The common characteristic of all three is that they contemplate the engagement of forces at short notice in a part of the theatre of operations which is either not yet occupied or is still in dispute, and which, in consequence, must be previously reconnoitred and secured before further action can be undertaken. If we leave out of account for the moment the power of action resulting from the employment of a strong force of well-trained troops under a capable commander, which will always be the *ultima ratio*, the success of a manœuvre depends partly upon surprise, secrecy and rapidity being the principal factors. The movement of a large force can probably not be hidden for long from a vigilant enemy who possesses modern and efficient means of reconnaissance; also the capacity of modern transport (railways, automobiles and, soon, aeroplanes)¹ makes it possible to take rapid steps to meet an unforeseen situation. Only the very greatest rapidity in the execution of this movement of forces can create a partial surprise, and render possible the attainment of the first objective before the enemy can put in sufficient force to prevent it.

The tactical mobility of a force, entirely independent of the method by which it moves (on foot, mounted, or in automobiles), is essentially dependent upon the state of security in which the movement is carried out. If there is no security, this mobility is rapidly decreased by 50 to 75 per cent., without taking into account the resulting fatigue and exhaustion. But the more limited the time, the more difficult it is to

¹ The recent trials made by the British in Mesopotamia have given quite encouraging results. Two Indian companies of about 300 men with heavy machine guns and 300 spare chargers have been carried in aeroplanes to a district in revolt, 65 miles distant, in less than 24 hours, each aeroplane carrying 20 fully equipped men or an equivalent weight.—(AUTHOR'S NOTE.)

provide security, and this difficulty is increased if the force to be covered is itself moving rapidly.

Therefore, to exploit to its fullest extent the capacities of motor transport, the most important question to tackle is that of security. Security is the result of—

- (a) Information obtained at a distance, whether by air or ground reconnaissance.
- (b) Actual possession of ground through the action of advanced flank and rear guards, and of outposts.
- (c) The normal organisation for reconnaissance, which enables the main body to move in security and to rest undisturbed.

Security in the case of a large force covering 90 to 120 miles a day demands the employment of adequate and well chosen covering forces under a commander specially fitted for his task. To estimate the strength and composition of these forces it is necessary to consider frontages and distances. Main roads (which alone need be considered for movements of large forces) occur in France at intervals of 6 to 9 miles. Two divisions moving on parallel roads would therefore give a zone about 12 to 15 miles wide to be covered, and each column would occupy a road space of 22 to 25 miles, and take three to four hours to pass a given point, reckoning 1,600 vehicles to the column.

Therefore the force which is to constitute the advanced guard must operate two to three hours' march (12 to 20 miles in space) ahead of the column. It must be capable of a higher maximum speed than that of the column it covers, since it must be able to clear up minor resistances and regain its distance, and it must be capable of rapidly searching the whole of the ground separating and on either side of the main roads in use. Insufficient speed will mean that the columns are frequently held up and move in an atmosphere of insecurity; failure to search ground will expose the column to the murderous effects of machine-gun fire.

These considerations imply that the whole of the covering force must be composed of mechanically propelled track vehicles. In addition to dealing with isolated detachments the advanced guard will probably, before contact is made with the enemy's main force, encounter a thin screen of automatic arms, backed by a few guns liberally supplied with ammunition, and intended to force on a premature deployment. If this screen is not to achieve its object, the advanced guard must be well supplied with means of reconnaissance and mobile artillery, its distribution must be flexible, and all ranks must display a reasoned initiative. To attack even such a light screen blindly is to court failure; speed must be attained by decisive action taken on an accurate knowledge of the situation.

Finally comes the phase known as the "prise de contact." For this the advanced guard will require reconnaissance detachments, which will work in conjunction with the Air Service and complete their observations. These detachments would work forward in contact

with the enemy's advanced troops and seize dominating points in order to facilitate the entry into action of the main body of the advanced guard. As the detachments are exposed to surprise of all kinds, they must be provided with armoured vehicles of various types, and with very ample means of communication. This action gives warning to the advanced guard, which adopts precautionary measures sometimes 12 to 15 miles from the point where contact is established.

The enemy will gradually be pinned down by these detachments and, subsequently, a series of local engagements will take place over the whole zone to be reconnoitred. An element essential to the success of these local engagements will be the possession of guns capable of firing at long ranges, with a wide angle of traverse, which will enable these attacks, fought by extremely mobile forces, to be very rapidly prepared and launched.

Finally, the advanced guard will find itself in contact with a resistance it cannot break, and will have to hold its ground while the main body deploys for battle. To fulfil this function it will require to be strong in automatic weapons and will have to employ all units, whose original mission has ceased to exist.

The wide interval separating the advanced guard from the columns it is covering will involve some form of close protection. However carefully the ground is swept by the advanced guard, it will always be possible for isolated detachments to slip in round the flanks, and a very small body may inflict heavy casualties and hold up the entire column. Flank and *liaison* detachments will, therefore, be required to work along secondary roads, and machine guns ready for action will be distributed along the column. Machine guns so disposed may equally help to protect the column against low flying aircraft.

The normal method of progression will be by a series of large bounds, each bound being so regulated, in relation to the ground and the road system, that a change of route is always possible. For example, in a march of 90 to 130 miles, which would take 10 to 12 hours, there would be three or four halts, each lasting between a quarter and half an hour. Such halts are essential for many reasons, principally to collect intelligence, which must be sent to fixed points. The advanced guard, in fact, works on the "block system," and raises or lowers the signal according to whether it has reached the next stage unopposed or not. If the advanced guard is held up the commander takes advantage of it to have the debussing points and return circuits reconnoitred and to study an alternative route. For this purpose he would have with him a specially trained M.T. technical staff.

When the main body has deployed for battle it may be expected that the advanced guard will be re-grouped and transferred to a flank in readiness for eventualities.

THE QUARTERMASTER-GENERAL'S DEPARTMENT AND THE ADMINISTRATIVE SERVICES IN INDIA FROM THE MUTINY TO THE PRESENT TIME.

By MAJOR-GENERAL SIR GEORGE MACMUNN, K.C.B., K.C.S.I.,
D.S.O.

On Wednesday, 3rd December, 1924, at 3 p.m.

GENERAL SIR EDMUND G. BARROW, G.C.B., G.C.S.I. (Vice-Chairman
of the Council) in the Chair.

LIEUT.-COLONEL SIR ARTHUR LEETHAM, K.C.V.O., C.M.G., F.S.A. (Secretary): Ladies and Gentlemen, I have to announce that Lieut.-General Sir Walter Campbell, the Quartermaster-General to the Forces, who was to have presided over the meeting this afternoon, very much regrets that, owing to the fact that he has to serve on a Committee sitting at the War Office, he is unable to be present. I was fortunate enough to get the Vice-Chairman of the Council, Sir Edmund Barrow, who is also the Indian representative on the Council, to take the Chair at very short notice.

I should also like to take this opportunity, on behalf of the Council of the Institution, of thanking the officers of the Indian Army generally for the way in which they support this Institution.

THE CHAIRMAN: Ladies and Gentlemen, the lecturer is known, I suppose to most of you. He was last year, I may remind you, the Quartermaster-General in India, and before that he commanded the Lines of Communication in Mesopotamia, so that many officers present to-day must know him well.

I do not propose to take up your time for long, but there are just one or two short remarks I should like to make before I call upon the lecturer to address you. The Quartermaster-General's Department in India had a great reputation in old days. Many distinguished officers were raised, so to speak, in the Quartermaster-General's Department: I need only mention, among others, Lord Roberts, Sir Charles McGregor, Sir William Lockhart; and I am sure it must have been a matter of great pride for Sir George MacMunn to have filled the same high office as they did.

With these words I formally introduce to you the lecturer, Major-General Sir George MacMunn.

LECTURE.

PART I.—THE MUTINY TO THE GREAT WAR.

1. Introduction.

SIR EDMUND BARROW, Ladies and Gentlemen: When the Council of the R.U.S.I. invited me to lecture, I felt that I should be most usefully interesting if I told you of the matters with which I have been most

intimately connected during the last few years, viz., the Quartermaster-General's Services of the Army, and—especially during the last four years—those, in India, in which I have had the privilege of being Quartermaster-General.

The story of the Quartermaster-General's Services that I want to tell to-day is the story of the Army gradually becoming responsible for its own housekeeping. For many years in England and for many more in India someone, other than the military authority, kept the lodging-house in which the soldier lodged . . . the box of soldiers which the Commander-in-Chief and his generals took out in the morning and played with. To tell it you I must tell the story of the past. As a man cannot get away from his shadow, so an army or any other institution cannot get away from its past. You never have a clean slate.

2. The meaning of the words "Quartermaster-General."

Before I turn to my special story to-day, that of the Quartermaster-General's Services, I should like to say a few words regarding the present meaning of the words. The present meaning is a very proper, but a very recent one. It means that the Housekeeping of the Army is in the Army's own hands. To-day the Quartermaster-General presides over all the needs of the Army in their quarters—barracks, clothes, food equipment, transport movements; but until very recent times he had very few of these duties. Everything to do with the spending of money was dealt with by some civil department not under the control of Army Headquarters. This was very largely due to a want of clear thinking, and a failure to distinguish between production, i.e., manufacture or purchase, which can be controlled by a semi-civil body and is generally so controlled and the actual estimation, storeholding, and distribution or issue of stores received from the manufacture, of which subject I shall say more later, for it is a very important distinction.

Practically up to the days of the South African War at the War Office, and till Lord Kitchener's day in India, the Quartermaster-General of the Army was much nearer a Chief of the General Staff than the universal housekeeper in camp and quarters that he now is. You will remember how famous was the old Quartermaster-General's department in India in the days of Sir Charles McGregor and Sir Frederick Roberts, to whom the Chairman has referred. But the Quartermaster-General of those days dealt largely with Intelligence, which included strategical plans, and with movements and with little else (though at the War Office that great child of Sir Redvers Buller, the Army Service Corps, had already come under his control). The Quartermaster-General's departments, with its picked men of brains, could have become a General Staff in either country. You will remember how the high functionaries of the German General Staff were called 1st Quartermaster-General, 2nd Quartermaster-General, etc.

However, in our Service, the name has gradually been applied to the discharge of duties consonant with its meaning. The Quartermaster-

General of to-day, both at Imperial Headquarters and in India, is the superhousekeeper. He provides and holds the stores necessary for quarters, food, clothes, equipment, horses, transport of all kinds, veterinary services. He indents on purchases, agencies, and Government factories for the articles to keep his stores full. In India he has actually had to produce some of them himself. But he is happily, or should be, relieved of the duties of purchase and manufacture, and is only concerned in seeing that each agency gives the goods and that they are of the specified standard. If the Army is not ready for War administratively he is in the position—it is his duty—to say so.

3. *The Quartermaster-General in India prior to the Mutiny.*

With the foregoing general remarks, I will now turn to the special subject of my lecture—that of the Quartermaster-General's Services in India from the Mutiny to the present day. I have selected the Mutiny, or rather its close, as the real starting-point because that was the period that resulted in the transfer of India to the Crown, from its historical control by the Honourable East India Company. But the actual start on modern lines began in 1895, when the Presidential Commanders-in-Chief were abolished and the four commands introduced. The development of system and the change of custom in India have been so great and their results in modifying organisation so great, that I think an outline of them will be interesting; indeed, it is almost impossible to understand present systems without a grasp of how they arose.

Prior to and for some time after the Mutiny there were three entirely distinct armies, those of Madras, Bombay and Bengal, the armies of the three Presidencies, which had grown up and inwards under different conditions, from the three widely different starting-points of Fort St George at Madras, Fort William at Calcutta, and the Castle at Bombay. The Presidential system had many advantages of decentralisation, which have been, unfortunately, lost under the unification of the armies. Feeding, quartering, and equipping the local armies rested with the local Governments. Each Government up to the nineties had its own Military Department, viz., its own War Office at its own headquarters. It arranged its own lines and arsenals. Had standardisation of establishments and equipment been insisted on and the decentralisation of provision remained, with unity of command at Army Headquarters, we should have had an ideal system from an administrative point of view. The size of the Bengal Army and the provinces it was responsible for would, however, have necessitated the forming of new presidential armies, and this was not possible on the lines required. Yet the policy of a local government or a territorial association responsible for housing and feeding troops to be trained and handled by a central authority is attractive. It is, for instance, the principle of the Swiss Militia system. Perhaps the real blot in it is that in war the Central Authority must assume responsibility for which its administrative services are not geared in peace time.

In those days the Commander-in-Chief in Bengal was *ex-officio* Commander-in-Chief of the British units of H.M. Army, but of nothing else, unless presidential troops were concentrated under his orders for any special purpose. This corresponded to some extent to the authority of the Governor-General, which was considerably limited over the two sister Presidencies. The rest of India he administered through Lieutenant-Governors and Chief Commissioners.

The Quartermaster-General at Bengal Headquarters was, therefore, little more than Quartermaster-General of the Bengal Army, and there were Quartermaster-Generals of Madras and Bombay. They were all concerned with little more than Intelligence and route books, and movements and quarterings. For, as at the War Office, provision and storekeeping of food was done by the military departments or civil side of their respective governments.

It must be remembered that up till Lord Kitchener's time Indian troops built and kept in repair their own lines, except the magazines and armouries, and up till 1917 provided their own clothes, other than full dress, and their own necessities and part of their equipment, as well as fed themselves, merely drawing a compensation allowance when the cost of a standard ration exceeded a fixed figure. Again, the Indian Cavalry, other than three "Regular" Regiments of Madras, provided themselves with everything, including horses, except their rifles or carbines. The various Services, therefore, were chiefly concerned with the maintenance of the European troops and custody of such war reserves as might be necessary, and most of these services were not controlled by the various army headquarters but by the civil side.

The foregoing shows how, before and after the Mutiny, the customs and conditions of India absolved the Quartermaster-Generals from peacetime housekeeping, but made it all the harder for them when they had to take on the duties in war.

4. The Four Commands.

The general progress of events made the system and the organisation just described, not only obsolete but very rapidly obsolete. The development of railways in the 70's and 80's quite put an end to the isolation of the Presidencies. The potential enemies within were no longer the independent princes and states of India herself, but rather external foes. The general progress of arms and ammunition, as well as the whole change of the internal atmosphere, quite put an end to the danger from these feudatories so far as the primary intent of the armies was concerned.

The Russian War scare of 1885, or indeed the two phases of the second Afghan War, 1878-81, had shown how unsuited the army system in India was for war on a large scale. The first thing to be done was to abolish the Presidential armies and the Presidential control and make the Government of India and the Commander-in-Chief the head of the armies in fact as well as in name. After much discussion it was

decided to place all the armies under the Commander-in-Chief, but with four army commanders instead of the two almost independent Commanders-in-Chief, who should relieve him of the responsibility of detail. The four Army Commanders were to have considerable administrative power, but all the major questions and policies would be controlled by Army Headquarters.

This change of system entirely altered the position of the Quartermaster-General in India, who now became responsible for his duties all over India, but those duties were by no means analogous to those of the present day, nor had he yet been recognised as the responsible army housekeeper. Those duties still consisted primarily of intelligence and strategical plans, movements, quarterings and the control of the veterinary services. At the War Office, through Sir Redvers Buller's conception and institution of the Army Service Corps, the distribution of supplies and transport had come under the Quartermaster-General; not so in India.

But the abolition of the presidential armies was only one of the administrative reforms: many more were necessary to make a homogeneous system, for there were separate ordnance departments, separate commissariats, separate medical services, separate remount services, all with *personnel* serving under different scales of promotion and with vested interests deep down into the past of John Company. To carry out the amalgamation meant interminable discussions, with actuarial and finance figures intervening, and, though they have at last been carried out, the evil of the systems has lasted almost to the present day, and we are still, in the departmental lists, not free of the incubus of vested rights and separate promotion lists. Without these unifications India was not ripe for Lord Kitchener's organisation, and if he had arrived before they had been completed he would have had still more tangles to unravel.

It is interesting to note the dates of the amalgamations and to explain that to a great extent these dates apply to future enlistments rather than to the *personnel* themselves who were serving at the time.

1864. Presidential Military Accounts.

1876. The Three Remount departments amalgamated.

1884. The Three Ordnance Departments. The three Commissariats.

1896. The Three Medical Services.

5. *The Military Department of the Government of India.*

Before coming to such modern times as Lord Kitchener's reforms, it is necessary to outline the organisation of the Indian War Office; that is to say, the machine by which the Government conducted its military business and its military finance. The whole question of the modern Quartermaster-General's Service is intimately connected therewith. The portfolio of the Secretary of State for War, who, in India, was called the Military Member of the Governor-General's Council, had

been from time immemorial held by a military officer, and when the Presidential armies amalgamated it only extended his responsibilities but did not materially alter his status, which had grown up from the smaller arrangements that existed on the same lines prior to the Mutiny. The Military Department, as the Military Member's office was called, was as separate from Army Headquarters as the War Office and Horse Guards were before 1870.

The Commander-in-Chief was only responsible for command and patronage in the Army, but for little of the real administration, which, as at home, was carried out by the Secretary of State—in this case the Military Member—who had under his hand all the military or semi-military departments concerned with the manufacture and even the storage and issue of stores, and all subjects calling for expenditure, such as factories, arsenals, the remount department, the supplies, the reserves, the military works. The Quartermaster-General had no concern with such matters. The Military Member kept the fully furnished residence in which the Commander-in-Chief's soldiers lodged very much as the old War Office did.

It will be readily conceived what a very important body the military department was, and the Military Member had a secretary and staff of assistant secretaries who dealt with the heads of these military departmental services. It will be seen, then, how much it was the duty of the Military Member, and that important Secretary who enjoyed the constitutional position that all Secretaries to Government in India occupy, to think and lead military thought on administrative military matters. The Commander-in-Chief was without the advice of departmental heads and his Quartermaster-General would be at sea in such matters, knowing perhaps that they wanted something but without the knowledge as to what to demand. It was the Military Member whose duty it was to study such matters. Its head was a leading soldier, though not such a leading soldier as the Commander-in-Chief. His staff of secretaries were specially selected military officers, and thereby hangs a curious tale, he always, or nearly always, selected Staff College graduates. The Indian Army affected to despise a trained Staff. The Military Department alone made a cult of them. I happened to be in the Staff Duties section in what was then called in India "the division of the Chief of the Staff (now the General Staff)" under Sir John Cowans, the Director at the time that Lord Kitchener had sent home his first proposals for a Staff College in India. I well remember the letters from the War Office (from Sir Douglas Haig, the Director of Staff Duties) to the effect: "What do you want with a staff college? The regimental ranks of both the Indian Army and the British units in India are full of Staff College graduates we have sent out to you, yet they are conspicuously absent in the ranks of your staff!" I was put on hastily to prepare lists of all p.s.c. men who were on the staff, and who were not, and to write up their dossiers, and Lord Kitchener gave orders that they must all be employed forthwith.

I mention this to show that the Military Department alone had for years collected p.s.c. men, as it will explain why it had become so strong a department and how and why at times it might be critical of the proposals of Army Headquarters. Both it and the old Quartermaster-General's branch of the days of McGregor and Roberts had all the germs which could have developed into a general staff, for it had a long record of consistent policy and doctrine and careful selection.

As the controversies regarding this organisation are inseparable from completing my story of the evolution of the Quartermaster-General, I have referred to the Military Department before bringing Lord Kitchener on to the scene.

6. *Lord Kitchener's arrival in India.*

Lord Kitchener came to India after the South African war with a mandate. It was then being definitely recognised in our Empire that armies—and, for the matter of that, navies—should exist for some very definite purpose. (Quite a modern cult with the Victorian English). They are either necessary or they are not, and while safety demanded their adequacy, economy demanded that they should not be more than adequate.

Lord Kitchener's mandate was to examine that necessity in India and prepare the army in accordance with the lines of modern war, of which even our South African experience had now given us a definite conception. That mandate included the peace grouping and training of troops in their war formations. Such a mandate demanded a very careful enquiry, and the acceptance eventually of premises and a programme. In arriving at these and in having his proposals carried out, he found that he was not responsible for the administrative services on which war must ultimately depend, nor did he find himself the ultimate technical adviser. The Military Member's duty was to have his own opinion as to reserves, arsenals, rations and the like.

This is not the place to discuss the pros and cons of the controversy which arose. In short, the Government of India did not agree with the Commander-in-Chief's point of view, and his proposals for a new organisation of which the Commander-in-Chief should be the head. H.M. Government, however, did, and it was introduced. It was, however, an interim arrangement, which eventually gave way to one placing even more responsibility in the Chief's hands. This organisation combined the office of Commander-in-Chief and Military Member, but created a Military Supply Member and department, with the duty of carrying out efficiently the duties of providing the Army stores and spending the Army money on such items, without incurring any responsibility for military policy. The tune was to be called by the Army Member, which was the new name for the Commander-in-Chief in the Ministerial side of his office.

The Military Supply Member, as he was called, was to be responsible

for arsenals, factories, remounts, the provision of supplies, the carrying out of military works, the custody of reserves, the provision of transport on expansion. The Army Member was responsible for all Army policy for financial provision and for the normal command of the army.

Thus the Quartermaster-General had still only to cope with movements and quarterings, veterinary services and transport, and the issue of supplies. In 1905 the great step had been taken of making the Commissariat Department, now called the Supply and Transport Corps, a part of the Army, and placing it under control of the Commander-in-Chief, instead of the Military Member. The Quartermaster-General handed to the Division of Chief of the Staff all intelligence duties and began his move towards his logical housekeeping duties.

It is interesting to note how very recently in this story of the Quartermaster-General's services a service such as supplies and transport, which requires to be on the most intimate terms with the troops, came under the control of the Commander-in-Chief. Here at home we have long insisted that those services on which the whole maintenance of troops in the field depend should be so organised that they are ready for war, and that they shall be under the control of the military authorities. In India this point was never realised, and it has been at the bottom of many of her wartime troubles of the past.

Now, it will be seen that the Military Supply Member, as organised by Lord Kitchener, was practically a Munition Minister, and an immense asset for war on a large scale. It displayed that wonderful *flair* that was so inherent in many of Lord Kitchener's schemes, and which those who knew him well always looked for. Unfortunately it was marred by want of clear thinking on this very point of intimate connection of distributory services. In the matter of food, it was all right, for it but purchased, but did not distribute; but it was in the matter of ordnance services and remounts that it was still wrong. The arsenals, the stores of the army, were not yet under the Army authorities. It was necessary to separate the factories' production control from the distribution control.

The arsenals should have been under the Commander-in-Chief. The clear and scientific line of cleavage between Army control and civil or financial control, is that between provision or production, and storage. Storage and issue is a matter of intimate military life, and an indispensable part of Army life in the field. It took the Great War and after to get this point clear in India. Then again military works, unless construction can be separated from everyday barrack administration and repair, is a very intimate military matter.

However, fate was not to leave this conception of a peacetime munitions ministry to remain for long, and have a chance of being amended, in the lesser defects described. Lord Morley, when Secretary of State for India, insisted that the expense of a second ministry connected with Military Affairs was too great, and was not justified.

by the amount of responsibility involved, and finally the whole of the work was transferred to the Army Department and, except finance, all to the military chiefs.

Now this placed the Commander-in-Chief in a very remarkable position, with, of course, very heavy responsibilities; but it gave him six military heads to deal with, at that time the necessary subordination of the Medical Services to the Adjutant-General had not then been carried out. The heads directly responsible to the Chief were :—

Chief of the General Staff; Adjutant-General; Quartermaster-General; Director General of Ordnance; Director General of Military Works; Director General of Army Medical Services.

The Quartermaster-General's responsibilities were increased, and he was now responsible for :—

Movements and quarterings; supply transport and clothing; remounts; veterinary services; farms—a new departmental service started to ensure a supply of fodder, which was often precarious, and of pure dairy produce for European troops and their families.

He had not, however, the most important of all, the control of the arsenals, viz., the storeholding and issue of the everyday requirements, and therefore was not in charge of the cognate duties of the Quartermaster-General, the housekeeping for the army. It was Lord Kitchener who said : "A man's responsibility is not the measure of his work," but it was in co-ordination rather than in work that the difficulty lay.

The duty of co-ordinating these six heads was really more than any Commander-in-Chief could carry out, and no Commander-in-Chief could have sufficient time and knowledge to do it. While, since the distribution of duties was not yet logical, it made co-ordination still more difficult.

The duties of the Quartermaster-General were heavy, but it must be remembered that at that time the army clothed themselves in peace, and partially equipped themselves, while, as already referred to, the Indian cavalry provide almost everything for themselves.

The foregoing arrangements were those in force at the outbreak of war, when various disabilities in the Quartermaster-General's branch, in addition to the question of the Arsenals, made themselves felt. These were :—

(i) The Arsenals were not in themselves complete suppliers of stores, the S. and T. corps supplying many small stores, and the engineers others, as well as all clothing, and managed the clothing factories.

(ii) The S. and T. corps were responsible for much of the remount department's duties in providing animals on mobilisation, and therefore there were two directors dealing with the animal resources of the country, and there were two directors dealing with stores and equipment. Further, the farms department,

instead of being an agency for supplying the S. and T. corps with certain supplies, had managed to become a secondary supply service on the headquarters of local commanders.

It is, therefore, obvious that a logical distribution of subjects had not yet been arrived at, and it was this, among other things, that contributed to the breakdown of administration services of India when put to the strain of a great war. Sir Douglas Haig, when Chief of the General Staff, had pointed them all out, in a powerful memorandum; but the appointment of the Nicholson Committee to re-examine Lord Kitchener's organisation caused the whole previous year before the war to be wasted, as nothing could be done while this report was under consideration

7. The Great War.

The foregoing has brought us to the system that existed at the opening of the Great War. I will not dwell on its earlier stages, except to say that the illogical grouping of subjects which I have pointed out did militate against war administration and wartime promptness, chiefly because cognate subjects were not in the same hands. I am very insistent on this point as the keystone to all good business organisation. I would ask you what you would think of a motor-car, in which one of the essential levers needed an appeal to a passenger in the back seat to operate.

To understand the changes which became necessary in India, let me hark back to the point that there was no corps in India fully corresponding to the R.A.O.C. concerned with being part of an army in the field, and managing its clothing and store supply, as the R.A.S.C. handles food and petrol. The Director-General Ordnance's services comprised factories as well as arsenals. At the War Office specially trained officers of the Royal Artillery managed the factories, and scientific study under the Medical-General Officer, while a storeholding R.A.O.C. under the Quartermaster-General, ran the arsenals, viz., the storeholding and distribution. In India the Deputy-General Officer had a department consisting entirely of R.A. Officers, some of whom were concerned with factories and some with arsenals. I may also here refer to the difficulties of handling administrative systems of which a large portion of the Army is working on different lines from the great centre.

When the war grew intensive, the Deputy-General Officer and his factories had to be absorbed into the Ministry of Munitions. The Storeholding then perforce came over to its proper affinity, the Quartermaster-General.

The moment that the control in India began to assume a more modern aspect, on its administrative side, by the advent of Sir Charles Monro and his new Quartermaster-General, Sir Edward Altham, one of the first steps taken was to place all arsenals under the Quartermaster-General, to borrow an Officer, Sir Charles Perry from the R.A.O.C., to manage them, and to transfer to this Director of Equipment and

Stores the same responsibilities as his branch and Corps would possess at home, taking over clothing and small stores from the Director of Supplies and Transport, at any rate temporarily, while, with the appointment of a Minister of Munitions, the D.G.O.S. and his factories passed over for the period of the war to the Ministry of Munitions, who was, of course, charged with developing all and every source of supply and manufacture. The work done, it need hardly be said, was, for India, very great.

Contracts for food, for which India had enormous calls for every theatre, remained with the Quartermaster-General, who obtained the services of a leading commercial man as Controller of Contracts.

During the latter portion of the War, therefore, the Quartermaster-General was charged with—

Supply and transport; Ordnance stores and clothing; Movements and quarterings; Veterinary services; Fodder and Dairy Farms; Remounts; Contracts.

Now this was a serious list, and it was made more so by the fundamental change whereby it became necessary to feed the Indian soldier and clothe him in peace time, which, except so far as full dress, had never been done; but I will deal further with this when I come to the story of to-day. Incidentally, I may mention that the Imperial Government at the end of 1917 asked for a very large increase in the Indian Army, and units innumerable had to be raised, housed and fed and many other departments much increased. However, the detail of these war activities under Lord Chelmsford and Sir C. Munro is another story, and only a small part of what was going on elsewhere.

PART II.—POST WAR. THE QUARTERMASTER-GENERAL'S SERVICES OF TO-DAY.

I. *The Esher Committee.*

I now come to the post war period, which I imagine will interest you most, when we have tried to apply the lessons and knowledge of the war, combined with the post war demands for economy, having due regard to the changing constitutional position of India, and also to the coming of mechanical transport. I should like here to refer to an almost unobserved episode, that of the 3rd Afghan War, lost in the trouble of demobilising everywhere. The Amir, believing India to be seething with revolt, poured his troops across our border at a time when every service was half demobilised, and the Quartermaster-General's services, which had been largely expanded by drawing upon the Home Territorials, were peremptorily demobilised, and denuded of efficient personnel.

Sir Charles Munro had impressed on the Government of India the desirability of placing their post war Military Services on a sound footing, in view of the experience of the War, and accordingly a

committee was appointed under the chairmanship of Lord Esher. After taking a good deal of evidence at home, the Committee came to India, all except the Chairman, Sir Michael O'Dwyer presiding temporarily in his stead. The Committee was very much impressed with the importance of placing the responsibility of administering the various services that an army requires in the field under the three principal staff officers of the army. They recommended, however, that all manufacture and provision should be placed under a civil member of supply, thus reverting to the short-lived Military Supply Department of Lord Kitchener's time, but more logically arranged. The department was to relieve the Quartermaster-General of all production. Farms, clothing, manufacture, as distinct from storage and distribution, would be in its hands, and also all contracts, thus relieving the Quartermaster-General of a responsibility not properly his. The Quartermaster-General, free of all contracts and production, would take over part of the Engineer services concerned in bricks and mortar, which was so intimately connected with the quartering portion of his duties. It would, of course, take the ordnance factories, still in charge of the Munitions Board.

It will be noted that the wartime condition of a Ministry of Munitions was always before the committee's eyes: they wanted an arrangement that could easily adapt itself to war conditions; the civil supply member could always become a munitions minister, and would be in touch with trade conditions.

A minority report was also issued which embodied the same principle of relieving the Quartermaster-General of all responsibility for production. This recommended the organisation of a civil supply branch as part of the Army Headquarters under the Commander-in-Chief as such, with title of Surveyor-General of Supply.

Shortly after the appearance of the Report the rupee collapsed; many controversial questions of policy arose, while the energies of all the Ministry, including the Army Member, were largely taxed to introduce and work the new parliamentary system, and the question of organising the civil ministry or civil branch of production and relieving the Quartermaster-General was hung up indefinitely. But with this process of demobilisation the various subjects returned from the defunct Ministry of Munitions to the Commander-in-Chief: clothing factories to the Quartermaster-General, and also the duties of armament policy, attached to him for convenience, on the recommendation of the Esher Committee. The Director General of Ordnance and the ordnance factories remained somewhat in the air under the Commander-in-Chief direct until the Esher Report could be considered. Similarly, demobilisation deprived the Quartermaster-General of the business head of his contracts department, to which he had to put an officer of the Supply and Transport Corps, of whom happily some existed with knowledge of markets. The corresponding relief promised, or rather held out by the Esher Committee, of clothing, manufacture, farms and contracts, did not

arise. From 1920 to 1924 the Quartermaster-General was, therefore, responsible for :—

- Movements and quarterings.
- Supply and transport.
- Ordnance and clothing storage and issue.
- Clothing factories.
- Remounts.
- Farms.
- Contracts.
- General control of military works.
- The special section dealing with patterns of armament stores.

Each of these directorates being, of course, under the control of a competent director.

2. Lord Rawlinson's Final Reorganisation.

Before describing the modern organisation of these various services, I will describe the final settlement which Lord Rawlinson recommended to Government, and which was accepted when, towards the end of 1923, it was possible to take up the recommendations of the Esher Committee. Immediately post war it did very much help in the settling down and winding up to have all these administrative strings in the Quartermaster-General's hands; but by the end of 1923 it was possible to get things on a more permanent footing. The Government of India decided against the separate Civil Supply Member, and favoured the minority recommendation of a Surveyor General in charge of production under the Commander-in-Chief. When, however, it came to actual detail, it was soon evident that no commercial or business man of any standing could be got for the salary that Government could offer, and that a soldier of administrative experience would be better than a mediocre civilian. It was, therefore, decided to have a military officer, for whom the title Master-General of Supply was selected, who should, under the Commander-in-Chief, take over the control of the ordnance factories, and should relieve the Quartermaster-General of his services of production and his purchasing responsibility.

This officer has now been appointed, Sir Edwin Atkinson being the first incumbent. He now controls the Director of Factories, the Controller of Farms, the Controller of Contracts, and the actual Clothing factories as distinct from the clothing stores.

This arrangement of Lord Rawlinson's actually completes, after many years of halting progress, the logical arrangement whereby production is in the hands of a special high official who is not in personal touch with the Army as a principal staff officer, while the Quartermaster-General is concerned with his legitimate duties of peace and war, and places his orders with the producing department without more concern than that of protest if his specification is not attended to. The trade—that is, the Master-General of Supply—either makes or buys what is

required; the exception is the purchase of local supplies, such as fresh meat, vegetables, firewood, and petty ordnance supplies, which are made under the authority of the district commanders by their assistant director of supplies and transport; he can, at a moment, become a munitions minister.

In the various discussions which have taken place, I have always tried to make clear this great dividing principle, which has at last been achieved, by using the Army and Navy, or other big stores as an analogy, viz., that the Quartermaster-General keeps the various departments, and gauges what his customers want, but the trade, under a separate agency, supplies.

The arrangement in India now is nearly analogous to what obtains at the War Office, but not quite; but then the War Office has a different system of government to serve.

3. *The Engineer Services.*

It will clear the air for a moment if I explain what has taken place with regard to the Engineer Services. After the publication of the report of the Esher Committee in 1920, when Sir Charles Monro was Commander-in-Chief, a committee under Sir Claude Jacob examined the detail of the military works services. The Military Works in India had come under considerable financial criticism, much of which, however, was the fault of no one except the war and post-war conditions in India. That committee recommended that the actual construction work of barracks and roads should be separated from the control of sapper and miner units and pioneers' corps, and the former placed under a Director of Military Works to serve under the general control of the Quartermaster-General, while the latter should be looked after by a Major-General of Royal Engineers attached to the Chief of the General Staff. Government approved these recommendations, and they were carried out. It will be remembered that this was, more or less, the second alternative of Lord Rawlinson's Committee on the Royal Engineers at home.

When Lord Rawlinson took over command he was of opinion that the first alternative of his committee was the more advisable and recombined both services under an Engineer-in-Chief, who would take his orders from the Quartermaster-General *re* construction, and from the Chief of the General Staff *re* fighting units. This change was brought into effect in 1923. I have detailed this arrangement, as the Quartermaster-General is so much concerned with barracking and communications

4. *The Administrative Corps under the Quartermaster-General.*

I have now brought the story up to the present day, and shown the framework of the Quartermaster-General's service of to-day, and the development of a logical, straightforward organisation. I now propose to describe briefly each service as it exists, which will, I hope, interest any of those here to-day who have been connected with those services.

I think I shall be able to show that the changes not only improve the status of those services, but simplify the conditions under which they have to work. I would ask you to remember that these services now work under a cost-accounting system, and while I have a great admiration for that system, its introduction into India has not been too easy, partly because of the difficulty of estimating in terms of cash some of the conditions that must be brought into the account. It has thrown a good deal of extra work on to the officers concerned. Before, however taking each service, I will explain the change in the status of the administrative services.

(a) *The Indian Army Service Corps.*—The old Commissariat Staff of the Army had been changed into the Supply and Transport Corps. I don't know why on earth that name was adopted, except at that time it was, apparently, the policy to be different from, instead of to resemble, the nomenclature of the Imperial Army.

The great disadvantage of different nomenclature was very clearly shown during the war, and we have now changed the name to the "Indian Army Service Corps," and further we have given the officers of that Corps the same combatant status as the officers of Royal Army Service Corps enjoy. An officer of the Indian Army Service Corps, for instance, would command the station if he happened to be the senior, which would not have been the case with an officer of the Supply and Transport Corps. This, of course, involves the passing of the same promotion examinations as officers of the rest of the Army, but such a trial was fixed well ahead, and it was not imposed on officers over a certain service. The advantage of such an arrangement is not only that officers of the corps become more part and parcel of the Army, understanding it better, but it does encourage a good stamp of officer to leave their units and join the Corps. The Mechanical Transport units are, nominally, Royal Army Service Corps units, the most of their officers and non-commissioned officers belonging to that corps, while the Indian rank and file belong to the Indian Army Service Corps. But before long it will be necessary to convert it into Indian Army Service Corps. There are several reasons for this, principally that it now demands too large a number of Royal Army Service Corps to serve abroad compared with those at home, and secondly because a measure of Indianisation of the officer ranks will, in time, be necessary, and the War Office has set its face against any of their officers being called to serve under Indians when they have not accepted such a condition of service.

(b) *The Indian Army Ordnance Corps.*—With the separation of the factory service from the arsenal service the question of a proper Indian Army Ordnance Corps with duties and status of the Royal Army Ordnance Corps came up, and it was decided to form an Indian Army Ordnance Corps, of which the former Arsenal lascars should form the Indian rank and file, and whose officers should be recruited from any branch of the service and not from the Artillery alone. Royal Artillery

officers with the Indian Army Ordnance Corps retain their regimental connection, but in future all officers will join the Indian Army for the Indian Army Ordnance Corps. It may be mentioned, incidentally, that those Royal Artillery officers required in the Factory Service will be drawn, as in Great Britain, from the regimental lists of the Royal Artillery, and will no longer join the Indian Army Ordnance Department, which, as such, will die out.

(c) *Army Veterinary Corps*.—Previous to the war there were officers of the Royal Army Veterinary Corps doing duty in India with British units and in British station hospitals, but the Indian cavalry and transport had their own Indian veterinary subordinates, who were not part of the Veterinary Corps. That Corps had no rank and file, and, with the exception of a few staff-sergeant farriers and warrant officers in the large hospitals, a unit used to be called on to send *personnel* to the station hospitals; nor could any field units be formed except by borrowing from units.

Since the war an Indian Army Veterinary Corps has been formed; all the cavalry and transport veterinary assistants have been transferred to it, as jemadars and ressaldars, and sufficient *personnel* duly enlisted to supervise syces in field units, while the Corps has some entertained syces of its own, and only when admissions to hospitals are heavy do units have to send theirs. A few of the Indian subordinate officers are given an extra allowance to take charge at small places, but they are not fully qualified veterinary surgeons. If and when Indian gentlemen adopt that profession, and obtain a full qualification, at home or in India hereafter, it will be possible to offer commissions in the Indian Army Veterinary Corps and reduce the number to be sent out by the Royal Army Veterinary Corps.

(d) *The Remount Service*.—A few words are necessary about the Remount *cadre*. In India these officers join a permanent department, while in Great Britain we are able to use retired officers. The actual remount system will be described later. Two Remount squadrons have been formed, primarily to give some nucleus for field units, as, now that a large reduction in Indian cavalry has taken place, it is not possible to form remount units in wartime by borrowing cavalry squadrons from non-mobilised units. The remount service, instead of being a side show apart, is now also part of the Army, and keeps in touch with its daily requirements. A few officers are lent to it from cavalry regiments, who will rejoin on mobilisation, their places being taken from the reserve. These are in addition to the permanent officers of the department, and it is from them that new candidates are usually taken.

Amalgamation and Indianisation.

At one time it was hoped that it might be possible to amalgamate the European cadres of the Royal Army Service Corps, the Indian Army Service Corps, and of the Royal Army Ordnance Corps and the Indian

Army Service Corps, so that there should only be one training and way of doing business. A good many obstacles make this impossible. Proportions at home and abroad are a very real difficulty, and then the question of Indianisation makes another. Undoubtedly some day, as soon as Indian officers with King's commissions in Indian regiments wish to join the Services and are suitable therefor, they will be admitted. At present we have not reached that stage.

The Supply Services.

The Supply portion of the Indian Army Service Corps is now grouped into actual supply units which carry out in peace the duties they will do in war. The District Supply Company deals with the troops of the formation it serves; while the Depot Supply Company deals with bulk supplies, from which the District Supply Company draws its supplies. It must not be overlooked that the Indian Army Service Corps feed every soldier and enrolled follower in India on a definite scale. The men draw a small cash allowance to pay for their minor condiments.

During the war, Depot Supply Companies were formed at various carefully selected points on the rail, to which purchases were delivered, and the stores passed into the Service. From these the various District Supply Companies drew their needs for distribution and passed them straight out to the units, who were provided with rations' stores to hold a maximum of ten days' rations. The demands for economy have compelled us to reduce these Depot Supply Companies, except on the frontier districts. The districts cis-Indus now get their consignments straight into station supply depôts from the Controller of Contracts; but how this will work I am not prepared to say. Sir Charles Monro and his Quartermaster-General thought that the Depot Supply Company was essential to the central purchase. On the frontiers, viz., on all formations trans-Indus the Depot Supply Company remains, so that there will be no change of system on mobilisation on the frontier, and the war system obtains in peace. Many will remember the chaos that obtained at frontier bases during the first weeks of war, before the war supply system could be got going, and how only a fire could possibly clear up the accounts!

Now, say at Peshawur, the District Supply Company formulates its wants and sees the bulk issues drawn from the Depot Supply Company and properly distributed exactly as in war, and the mere fact that more troops are coming does not upset anyone. The Depot Supply Company is the L. of C. unit always moving one of its parties to railhead.

In those districts which furnish a war division, such as Rawal Pindi, the District Supply Company mobilises from its resources the Divisional Supply Company of the division. Before this organisation something of the sort existed in divisional areas, but the adoption of a suitable nomenclature immediately clears the air and makes every one understand what it is all about. Nomenclature in matters of organisation plays a very important part.

The real essence of the system is the Depôt Supply Company—the L. of C. unit—on the frontier, issuing in peace exactly as it would in war, on the system the whole Army learnt during the Great War. Another essential point of the modern system is the central purchase. That again means that the transition from peace to war is automatic. As the supplies are purchased and delivered in peace, so will they be bought and delivered in war. Now, one of the features of life in India is that certain articles of food are produced in certain areas only. Wheat comes from Lucknow, Lahore and Delhi, where there are large grain markets. Rice is grown in Burma and in the South. Ghee comes from certain districts where grain, and therefore cattle, abound. However much you place a contract in Bangalore or Poona, the contractor buys at the markets of the districts where the goods are produced. Now, the military authorities, the Controller of Contracts, buys at the market through his own broker—wheat at wholesale prices; tea in the Calcutta tea market; rice f.o.b. at Rangoon; sugar perhaps f.o.b. in Java, and so on. Local supply officers are no longer worried to death, and subordinates endangered by local contractors, except so far as the daily fresh supplies are concerned. The result is favourable prices; no contracts; no petitions from contractors pinched by rising markets; every advantage of falling prices, and so forth. The saving has been found to be great. Every loss that you have incidental to such transactions is also felt by the middleman, and he but adds them to his local prices.

When the Quartermaster-General found himself buying and holding large stocks of food of all kinds, including tinned foods, hospital reserves and the like, he found he wanted a food laboratory. He had no other way of testing the value of grains of various kinds, nor of the goodness of tinned food, nor of the reliability of mobilisation reserves. So a food laboratory was started as part of the establishment of the Director of Supply and Transport, which fills five valuable functions:—

- (i) It advises the Controller of Contracts if the sample tendered has itself a proper and sufficient food value. This is especially important with regard to wheats.
- (ii) It examines samples of the actual supply to see that they are of the standard agreed on.
- (iii) It advises on complaints that may come from the troops.
- (iv) It examines reserves of preserved food to see whether they are approaching a limit of unfitness, so that those brands of dates which are showing age shall be brought to consumption before any deterioration has set in.
- (v) It studies the important and popular subject of vitamins. Many guinea-pigs lead a pathetic career in the process of trying the values of foods. We do not want again the scurvy and beri-beri of Mesopotamian days.

It will readily be imagined how an institution such as this saves its own cost many times over. In fact, it is a great necessity, now that

Government deal with non-perishable foodstuffs in large quantities in a country where there are few, if any, of the safeguards which exist in England.

Animal Transport.

There has been a certain amount of change in the organisation of animal transport. In the first place, it may be said that the march of irrigation is largely killing the camel and the population used to camels. We find that we cannot keep up all the Silladar Corps. We, however, must have camel transport. It is considered that there is no reason why British officers and Punjabi drivers should not be as good as any camel owners at their job. So a certain number of Government Camel Corps and expansible camel *cadres* have been retained from all those raised during the war. The mule corps, perhaps the most world-travelled and uniformly successful units of all the Empire's troops, have been formed into corps, now called companies, partly pack and partly cart, to fit a formation. We have, therefore, brigade transport companies and divisional troop transport companies. Perhaps the most practical change is that we have raised three cavalry brigade transport companies, with a fast-moving transport of limbered carts with postillion draft and pack animals led by a mounted man. It was always a defect that our cavalry had not a fast-moving transport.

We have now also adequate transport depôts on which the corps are based.

Mechanical Transport.

I must now turn to mechanical transport. When the war broke out, there was none in India, nor was there any in civil life. Motor-cars were comparatively few, and repair shops only of the tinker class; during the war, when a large number of Ford companies were formed for Mesopotamia, many Burmans were trained as drivers in India; but when the Afghan War came, however, there was little in the way of efficient stuff in India itself. Cars and lorries were rushed from various theatres of demobilisation, and it was a long time before any standard organisation could be evolved in the general hurry and rush. As matters settled down, however, a large depôt was formed, now at Sitapur, where drivers are trained. A definite number of light and heavy lorry units exist, and ambulance companies, with repair and other travelling units. Some of the lorry companies are on a full, and some on a *cadre* establishment. The officer and British other ranks come from the R.A.S.C.; the rank and file are enlisted into the I.A.C. I won't trouble you with all the detail: there has had to be a big compromise between what we can afford and what the Army want. But I am glad to say that the real basis of organisation, workshops, is on a very satisfactory basis. The Government of India, during the Afghan War, on the advice of Lord Montague of Beaulieu, built a large—almost a too large—workshop at Rawal Pindi. It was thoroughly equipped with machinery, and though the question of adequate artificers has given rise to many

difficulties, yet they have, I think, been overcome. And, at any rate, there is now in India what no private firm at present offers—a large and complete repair shop, capable of expanding to take a large amount of work. I am not sure that Rawal Pindi was quite the best place, but at the time it was started it seemed to be. It is well equipped with quarters for the workpeople, as well as for officers and other ranks.

The Ordnance Services.

The Ordnance Services comprise the whole of the storage and distribution arrangements of all equipment, small stores, barrack stores, hospital stores and clothing, and the repair of all arms, guns and equipment, as well as their testing and inspection while in the hands of the troops. The repairs, however, only belong to the class known as workshop repairs. The larger repairs, known as "factory" repairs, go to the ordnance factory. In other words, they go to the makers. The actual clothing factories have just gone over to the Master-General of Supply, on the ground that they belong to "production." Logically they do, and in war-time they are undoubtedly a function that must be largely expanded under the Ministry of Munitions. There was an everyday convenience in having questions of pattern, storing and manufacture under the one head, and this subject is in England with the Quarter-master-General. The real manufacture is where the materials are made. However, the new allotment of the clothing factories to the province of the Master-General of Supply is logical enough, and helped to balance the work of that branch.

The arsenals in India, stationed mostly on rivers, are within fortresses, into which railway lines penetrate awkwardly, and were made in far different days. They are not logically placed for the commands they served, and they are miserable in their accommodation. Expense prohibits much amelioration, but in modern days there is no reason why these arsenals should contain any more than working stocks, and it is proposed to hold all reserves in a base arsenal to be built at Karachi, feeding other arsenals as required, and being near the port and on a double line of rail both to Quetta and to Lahore. Happily, a large base was constructed at Lahore during the Afghan War for supplies, and a considerable portion of this has been made available for the clothing stores of Northern India. It has ten vast sheds of a modern ratproof type, and has railway sidings both sides of the sheds.

The Remount Service.

The change in the fundamental principles under which the Indian Army is maintained in peace have largely increased the scope of this Service. It not only now horses the Indian Cavalry, but it is responsible for the provision of all animals, from a donkey to an elephant, that the Army may require in peace and war for any purpose, save food and the guinea-pig establishment of the Army Food Laboratory. There are

many here, no doubt, who will regret that officers of the Indian Cavalry no longer are responsible for their own remounts. There are, of course, as in every other question, arguments on both sides; and in this case, as in those of the feeding and clothing of the Indian troops, I could probably convince anyone of where the balance lay, if I had the opportunity to explain the pros and cons to them. As regards the cavalry horses, there is one main point, and that is that the country-bred breeding outside the operations of the Army Remount Department has almost died away, or else prices have become prohibitive. For many years the Indian Cavalry have been mounting themselves on cheap walers. But as the Remount Department are buying many walers for the British Cavalry and the Artillery, it is desirable to have all this business in expert hands that know the dealers and their ways, and who go from time to time to Australia to study the markets and the breeding grounds. This brings me to another very grave point, viz., that the horse market, or rather the riding market, is dying away in Australia. Far fewer riding horses are bred as the country is developed. Our Remount officers find that every year now there are greater difficulties. The "Tin Lizzie" is ousting the riding horse. Draught horses are still required and produced. Before long India will have to produce more horses for herself or go horseless. Happily, India has not been idle. Lord Curzon, in pursuance of his policy of making India more self-contained militarily, approved and furthered the great Swadeshi remount policy, after a very careful inquiry as to what really were sound lines. The secret of horse-breeding schemes is to start a sound policy and stick to it. You can't dig it up frequently to look at the roots. Indian indigenous horse-breeding was dying out. The attempts at stimulating it have been on fatuous lines. In England the Army is your bottom, or nearly your bottom, customer. The half-bred horse trade has the 200-guinea hunter as its aim. In India the Army is the top of the market; therefore horse-breeding has been entrusted to the Army Remount Department. Twenty-three years ago the present scheme was started of giving land on the new canal colonies to selected men who would keep mares passed by the Remount Department and put them to the Remount Department's stallions, who were stationed at convenient centres. The Remount Department have the right to buy the progeny as yearlings at a fixed price if they wish. This scheme has borne remarkable fruit. The new Imperial Delhi Horse Show, now in its third season, has exhibited to the Indian world the marvellous results of 23 years' uninterrupted work. It is possible to mount British Cavalry on upstanding horses, some of which are even 16 hands in height. The Remount Department is breeding its own sires (Arabs), and is also re-creating the almost extinct Indian breeds of endurance, the Mewari, the Mewati and the Khatiawar, as sires. The Department has two runs of 15,000 acres each on the canal colonies of the Punjab, where 3,000 young stock and 3,000 young mules (for pack artillery purposes) are run. These mules are also produced on "bound" colonies

on the same principles as the horses. It is necessary to buy the horses and mules young, because no Indian breeder has the land to let them run and grow. He wants it for crops. They must run free to grow and expand. I have not time to tell you all the story, economic and otherwise, that is comprised in the question. Suffice it to say that I try to rub it in to my Indian political friends that every penny spent on this scheme is spent at home rather than given to Australian breeders and shipping companies. It is pure Swadeshi enterprise. I recommend every officer in India who wants a good charger, whether of polo size or otherwise, to see what the country-bred depôts can do for him. Many of the young stock are nine-tenths thoroughbred English or Arab.

The Farms.

Though this subject has been transferred to the Master-General of Supply as purely a service of production, it has been for so many years managed by the Quartermaster-General that it may well be described here. It was realised by Government many years ago that it was impossible to assure an unfailing supply of good fodder in India unless Government grew it, or at any rate cut it itself. Hay is not a crop that farmers grow for sale as they do in England. There is no hay production as a business at all. Formerly, contractors would be engaged to gather labour and cut hay in such of the Government *rucks*, or wild forest and pasture land, as might be in the neighbourhood. Very often there was none, and fodder had to be brought from far afield. Now, hay in India is like the proverbial pear. There is only half an hour in its lifetime when it is fit to save. Hay in India is never properly saved, but the Farms Department make a far better effort than ever did the contractor. In the contractor days there was no fodder in time of drought, and Government was put to an immense expense to keep their animals going. The Farms Department have army land placed in their hands, and cantonment lands for such months as the generals can spare the training grounds, and, further, actually farm certain tracts especially to produce oat, hay and green fodder. They also reap the forest land and stack large reserves in good years ready for days of drought.

When enteric fever, twenty or thirty years ago, was the curse of army life in India, Government started dairies to provide British soldiers and their families with safe dairy produce, so the military dairies have very fine herds and produce very fine milk and butter. During the war, they produced large quantities of cheese for the troops in Mesopotamia. Government dairies, however, are not really economic, and where a satisfactory dairy company are prepared to open dairies on sanitary lines under military medical supervision it is the policy to encourage them. For the last four years since the cost accounting system has been introduced into India, and the farms have been run on business lines, they are treated as a firm supplying produce to the I.A.S.C., and are not part of the military administration of districts. At one time there was a tendency for this department to

become a separate administrative service for fodder and dairy supplies duplicating the I.A.S.C., which is just the sort of topsy-turvy point of view that so easily grows in India.

The Controller of Contracts.

This branch has also just left the Quartermaster-General. The general method of obtaining supplies has been referred to under that head. But the Controller also purchases lubricants, oil and paints, and all supplies for the Ordnance Services that are obtained in India from other sources than from the Army factories.

Movements and Quarterings.

I have not time to tell you to-night of the changes in the cantonment situation due to our having to follow, as far as possible, the change in constitution in Indian Government; nor the change in the Cantonments Magistrates Department, which is administered by the Quartermaster-General. Nor can I touch more than very briefly on the housing of officers, which is a very difficult subject; but I would say that the Government have recognised the great shortage of accommodation in certain stations, and also the difficulty that married officers experience in equipping a bungalow for the five or six winter months when their wives and children can be with them. They have, therefore, permitted the Commander-in-Chief to build four married officers' hotels, chiefly for married people, known as "Army Mansions," in Lahore Cantonment, Peshawur, Quetta and Kohat. These take from 20 to 40 residents, with messing accommodation for a good many more and camp sites round. They are very well-arranged, with excellent dining and public rooms, and are really a married officers' mess. The catering endeavours to give real English cooking and food, and the hostels are managed by the Army Canteen Board.

This brings me to another activity of this directorate, and that is the Army Canteen Board. The Army dislikes a Canteen Board, or did, oblivious perhaps of the real problem. And in India a really good contractor in a regiment does more in some ways than the best Board can. But armies exist for war, and in Mesopotamia and Afghanistan it was soon patent that an adequate canteen supply was only possible in war if an organisation existed in peace for that purpose. So a Canteen Board in India, under the Companies Act, is serving the troops in the Rawal Pindi, Peshawur, Lahore, Quetta and Kohat districts. It makes the usual rebates, and as it pays off its initial expenses it should contribute handsomely to the funds of the Army. Its management of the hostels is one of the most useful of its activities, which should increase in any way that it can be of use to the Army. Another point that I have no time to expand is the great saving in railway charges and the improved service for the troops' comfort due to a war relic, the Railway Control Section, in the movements and quarterings directorate. Troops in India in one move often travel over the lines

of many companies, and local military authorities cannot co-ordinate these efficiently. The Quartermaster-General's staff, sitting beside the Railway Board of all India, can do so. This does not apply, of course, to small parties, who travel in ordinary public coaches.

Ladies and gentlemen, this concludes my *résumé* of a branch of the Army which has little of the Romance of War to charm it, but without which the Army can neither live in peace nor command victory in war, and I hope I have been able to give you an indication of how the Army in India came to do its own housekeeping and how that housekeeping is carried out.

DISCUSSION.

THE CHAIRMAN: Ladies and Gentlemen, you have heard the views of a great expert on this subject, but I hope there are some present who who are prepared to take part in the discussion. I am quite aware that it is a most difficult subject to tackle. Nevertheless, I am sure that we have all learned a great deal, and I hope we shall have a useful and interesting discussion.

MAJOR-GENERAL CORKER: I should like to ask one or two questions. Some time ago there were some medical manoeuvres in Poona which lasted for three days. The question then came up of the medical transport of the sick and wounded in war, owing to the fact that during the manoeuvres one of the officers was informed that he had shown the transport moving into action against the skyline, and thus altogether given away the military position. I had to speak on the subject because I was one of the chief medical umpires and I was asked to sum up the situation. I pointed out that the officer in question had either to leave the wounded untended, or to move up his transport, which consisted simply of a few gharries. I urged that there should be introduced some kind of fast-moving transport. That was in 1914, I think, but the only idea that we had at that time was the use of a fast trotting tonga. I should like to ask the lecturer if that state of affairs has been improved.

MAJOR-GENERAL SIR GEORGE MACMUNN: I think there are now ten motor ambulance convoys organised in India, and a great deal more in *cadre*. Those ambulance convoys furnish the motor ambulance transport of each division and behind. There are so many field ambulances in a division, and each of these has a motor convoy with 15 or 20 motor ambulances, each of which carry four cases lying down and several others sitting up. So that where a Ford ambulance or an ambulance of that type can run at all you can get your wounded attended to. But, of course, in the hills you have got to carry your wounded down to a wheeled vehicle, whether it is a motor ambulance or a horse ambulance, so that for that purpose the same old machinery of a rather improved dhooley or a stretcher-bearer must remain. I know of no way of getting your wounded down from the top of a mountain until you get on to the roadway than the old method. But the moment you get to the wheeled transport, there is a large supply of that, and the moment war breaks out there would be a larger supply still, because we can expand the number fairly readily.

LIEUT.-COLONEL J. GRIMWOOD, C.B., D.S.O., F.S.A.A.: I have been deeply interested in the way the lecturer has traced the vicissitudes and changes through which the Quartermaster-General's department has passed during the last 32 years, shedding little by little civilian control until military control and military

administration have at last been recognised as the only way to obtain the highest efficiency with regard to military housekeeping.

What has proved so successful—yet so slow in achievement—for the Quartermaster General's Department, India, would, I believe, be equally successful with regard to the Accounting, Pay and Finance Services (British Army). Speaking with full knowledge of existing conditions, I am of opinion that control and organisation to-day of the Accounts, Pay and Finance Department of the British Army is comparable with the control and organisation of the Quartermaster-General's Department in India at the time of the Mutiny, or, to be generous, let us say at the time of the abolition of the Presidential Armies, 1892.

The greatest aid to control is to be found in the use of the most modern methods of accountancy. Nevertheless, however correct those methods may be, they will be *useless* unless the chain of accounts—the *personnel* concerned—and the supreme control is similar to the reformed Quartermaster-General's Department and is in the hands of the Army itself under a Military Accountant-General (who should *not* be a member of the Army Council), professionally qualified in the science of accounts and capable of carrying out the responsibilities of his Office.

The lecturer has, I think, indicated how the Department of the Quartermaster-General gradually overcame the powerful opposition with which they must have been confronted in order to obtain their present organisation, which has no doubt generally benefitted the Department itself as a whole, but which has especially benefitted the executive and combatant services. What the Esher Committee of 1920 (Minority Report) did for the Quartermaster-General's Department in India, the Lawrence Report, if carried out, can do for the Accounts, Pay and Finance Department of the British Army and can also add the finishing touches to the British Quartermaster-General's Department which were left undone by the Esher Committee of 1905 (British Army). The Lawrence Report can *only* be carried out if the great elemental factor which was present in India be also present here, *i.e.*, that the highest military authority be determined to have the "best possible" for the Army, and dare to take its life and progress into its own hands.

THE CHAIRMAN: We have just been favoured with the point of view of an expert Accountant. Are there present any expert Transport officers or expert Ordnance officers? If so, I hope they, too, will take part in the discussion. No responses?

As no one else rises to speak, I suppose you will expect a few remarks on this subject of Army administration from the Chairman. Everything has changed so completely since my day, that I think it would be almost impertinent on my part to criticise the lecture. Sir George MacMunn has a vast and intimate knowledge of the machinery of the Army at the present time; I have not; and therefore it would be inappropriate for me to take up your time except that I would like to make some defence or apology for the old system. It may not have been a very efficient system; I do not think it was an efficient system even in England twenty years ago; it certainly was not an efficient system in most of the countries of the Continent. Yet during the course of the War we extemporised probably as good a system as any nation. In war, as we now look at it, you are not dealing with a small expeditionary force—which was all that we expected of the old system—but you are dealing with nations in arms. The whole Army system, therefore, must be quite different now from what it was in former days, and it is only those who dealt with military affairs in the field of recent years who are competent to form any idea as to what we should do in

the future. It only remains for me to ask you to pass a very cordial vote of thanks to the lecturer for the exceedingly interesting way in which he has put the matter before us. He has had to deal with a very complex and difficult subject, and I do not know that anyone else could have dealt with it better. I am sure, therefore, you will all readily assent to passing a vote of thanks to Sir George MacMunn for the great trouble he has taken in putting the subject before us.

The resolution of thanks was carried by acclamation.

COLONEL SIR CHARLES YATE, M.P. : Ladies and Gentlemen, May I ask you to pass a cordial vote of thanks to Sir Edmund Barrow for coming and taking the Chair at such short notice this afternoon.

The resolution of thanks was carried by acclamation and the meeting terminated.

OPERATIONS ON INTERIOR LINES IN BUSH WARFARE.

(GERMAN EAST AFRICA. JUNE TO OCTOBER, 1917).

By COLONEL G. M. ORR,¹ C.B.E., D.S.O., Indian Army (Retd.).

THE general plan of campaign in East Africa in 1917 necessitated columns working towards one another from bases wide apart. In the eastern theatre, where the British main force was to deal with the main German force under the direct command of General von Lettow, the plan consisted of one force moving down south, while another moved in westwards from the coast. Such strategy naturally gave opportunities to the defenders of German East Africa to make use of operations on interior lines.

The size of the actual theatre of operations in which Lettow opposed the British main force under General van Deventer was a parallelogram whose north and south faces were about 100 miles and whose east and west faces were about 150 miles. The north and south faces were the rivers Matandu and Rovuma respectively, the east face was the coast line.

The reader will understand that East Africa was devoid of railways or metalled roads, that communications were bush paths or tracks which had to be widened to take infantry in fours, or wheeled traffic, with the exception of the track from Lindi to Massassi.

At the beginning of June, 1917, the British forces in this eastern theatre consisted of approximately two brigades facing south on the Ngaura River, near Kilwa, and one brigade at Lindi. From the evidence of Lettow himself in his "Reminiscences of East Africa," the German dispositions were nine companies under Lieberman facing the Kilwa force, seven companies under Wahle facing Lindi, and four companies under his personal command in reserve at Mpotora. There were two other companies near the Rovuma which came north in October. Lettow had not as yet got his supply depôts organised between the Matandu and the Rovuma and his companies were forced to live on the country. There were very wide stretches of barren country between the Matandu and the Lukuledi. This was probably the reason why he continued to keep his reserve at Mpotora rather than in a more central position between Lieberman and Wahle, and in spite of his belief that our main line of advance would be from Lindi rather than from Kilwa. For early in June he noticed a strengthening of the Lindi force, and says,

¹ The writer was commanding Number "One" Column of the Kilwa Force in 1917.

"the obvious idea that the enemy would advance from Lindi against our weak forces and our main supply area, as had been his intention earlier at Kilwa, appeared to be materialising."

In the middle of June he heard that Wahle had been pressed back up the Lukuledi River to about 20 miles from Lindi. It seemed to him that our flank to the north of the Lindi road was thereby incautiously exposed. He decided to march at once towards Lindi, and, trusting to his movement not being discovered, bring off a surprise attack. He left Mpotora with four companies and two guns, and marching *via* Nahungo he reached, on the 29th June, the vicinity of Naitiwi. Fortune favoured him in that a small force of 150 rifles (not a whole battalion as stated by Lettow) had moved out from Naitiwi to mop up a small enemy detachment. In this it was successful, but in its turn it was surprised and surrounded on the morning of the 30th by Lettow and only 50 men escaped.

The operations near Lindi which had attracted Lettow's notice were of a limited character, with the object of clearing an area round Lindi in order to secure a better water supply and prepare the main exits from the town and harbour. Lettow arrived on the scene when the operation had already been completed. He remained in the vicinity for over a week, but made no further attempt to strike at the flank of our force or at its communications with Lindi.

G.H.Q. plan for July was for the Lindi force to contain the enemy opposing it and await reinforcements for its future offensive, while the Kilwa force was to drive the enemy in its front to the south of the Kituriki hills. On the 5th July the Kilwa force advanced and on the 6th fought the action of Mnindi, but failed to prevent Lieberman getting away to the entrenched position covering the Narungombe water holes.¹ Directly Lettow heard of the advance of the Kilwa force and the result of the Mnindi action, he thought "the moment had come to make a rapid countermarch come unexpectedly to the aid of Captain von Lieberman and perhaps seize a favourable opportunity to inflict a decisive defeat upon the enemy." Moving north with three companies and two guns through unknown country, he arrived on the night of 18th July at a place six hours' march from the Narungombe water holes. The sound of continuous firing on the 19th caused him to press on, but by nightfall the head of his column was still three hours' march from Narungombe: his men were very exhausted and the companies not all up. The march was continued at 3 a.m., but hearing that Lieberman had fallen back on Mihambia, Lettow moved to join him there. He had arrived too late to intervene in the action of Narungombe, where, from the evidence of the carefully-prepared and entrenched position, he had no doubt meant to put up a determined fight. The defeat of the enemy at Narungombe had completed the task set to the Kilwa force of clearing the Kituriki hills. Before the

¹ The fact of an entrenched position at Narungombe was unknown until the attack developed against it on July 19.

next big step forward could be made, the Kilwa force was to be reinforced and a supply base to be established. Lettow's arrival with reinforcements in no way affected the intended course of operations on the Kilwa force front, though he likes to think it did.

It is necessary to make some remarks on Lettow's "Reminiscences of East Africa." They are invaluable to any student of the war in East Africa. He, naturally, perhaps, often claims success for his arms when it is difficult to see wherein the success lay. His narrative of actions in which he himself was present are reliable accounts, and no one can deny him a right to an opinion on things as he saw them. His "Reminiscences," however, are not reliable when he recounts actions or events at which he was not present, but which he obtained from his subordinates. He without doubt retails their reports in good faith, but the result is that his story is marred by several gross mis-statements. Nowhere are these statements so flagrant, nor the inferences so misleading, as in his accounts of the actions of Mnindi and Narungombe. For instance, he states that Captain Spangenberg, who commanded the right flank of the German position at Mnindi, attacked the enemy's brigade opposed to him so energetically with his two companies that the English reports spoke of an attack by very strong forces. Captain Spangenberg made no counterattack at all, and no report ever stated or implied that strong enemy forces made any forward movement. Similarly there is no truth in the statements that at Narungombe the 7th and 8th South African regiments were almost broken up, or that the main body of the British broke and fled in wild disorder. Lieberman had apparently reported that he had defeated the Kilwa force and had retired only because of a shortage of ammunition. It is a thousand pities that Lettow should have given such ready belief to the reports of subordinates, who, it is evident, wished to make out a good case for themselves.

Lettow remained in the vicinity of Mihambia till the beginning of August. He had apparently already come to the conclusion that he could not keep so large a force supplied in that area, when events on the Lindi front decided him to move at once back there. Wahle had fallen back on about the 11th August to Nurunyu. Lettow now hoped, as he says, to "bring off the operation that had failed at Narungombe." Taking with him four companies and two guns, he marched across to the Lindi road at Nyangao and arrived at Nurunyu in time to take part in the action of the 18th August. With regard to this action Lettow naïvely remarks that "the complete victory desired had not been attained and, in view of the difficulties of the ground, could not be expected, as we had discovered our strength to the enemy in the fighting of the 18th, and lost the advantage of a surprise."

Although Lettow failed to prevent the successful completion of our Nurunyu operations, his presence with his reserve on that front had the effect of deciding British G.H.Q. not to press the Lindi offensive farther at that time, but to wait till the Kilwa force was ready to move.

During this lull in the operations Lettow's attention was attracted

to events in the south-west. A German column which had entered Portuguese territory to make a supply reconnaissance was being pressed back over the Rovuma towards Tunduru by a small British column from the eastern shore of Lake Nyassa. Lettow's intelligence also reported (incorrectly) that enemy forces were advancing from Songea¹ on Tunduru. Lettow now thought he might score a success in that direction and marched on the 10th September from Nurunyu with five companies to Massassi, but came to the conclusion that the intended success at Tunduru could not be attained.

He remained at Massassi until the beginning of October, when he heard of the advance of the Kilwa force to the Mbemkuru River, and that the supply depôts up that river had been raided by our mounted troops. He at once marched his five companies *via* Lukuledi Mission and Ruponda to Likangara (presumably Ruangwa of British reports), in the vicinity of which his Lieutenant, Koehl, was facing what was in reality a weak column of the Kilwa force. Lettow must have barely reached Ruangwa when he heard that a strong column had seized, on the 10th October, his supply depôt at Ruponda. It was thought, at the time, that our force at Ruponda would block the retreat of the German force from Ruangwa, but it very soon became evident that the Germans had some alternative line of retreat to the south. The maps in our possession showed a large tract of country south of Ruangwa without any names on it. Intelligence of an increase of German forces at Ruangwa and reports that Lettow himself was there led British G.H.Q. to fear a strong enemy movement northwards against our long-drawn out line of communications to Kilwa: the steps taken to guard against this possibility did not, however, affect the course of operations.

Meanwhile three battalions of Nigerians had been sent from Nahungu on the 4th October across country to assist the Lindi force by cutting off the enemy's line of retirement by the Mahiwa-Massassi road. This move did not altogether escape the notice of Lettow, who once more thought he had an opportunity to bring off a surprise reinforcement of Wahle's force on the Lindi road. Wahle had now retreated as far as Nyangao, and it seemed to Lettow that a march across to that place could be completed before it was known that it had taken place. And so, starting on the 10th October with his five companies and two guns, he arrived a few miles north of Mahiwa on the 16th, on the same day as the Nigerians, coming from the north, were groping for the left flank or rear of Wahle's force. The meeting of the Nigerians and Lettow's companies was a surprise to both, but the advantage was with Lettow. The line of advance of his companies bore directly on the flank of the Nigerians. Severe fighting took place throughout the 16th, 17th, 18th and 19th, and the advance of the Lindi force was brought to a standstill at Mahiwa. Meanwhile the column of the Kilwa force at Ruponda had been sent to Lukuledi Mission, which it occupied on the night of the 18th October, after driving off three enemy companies. Lettow at once saw the danger

¹ Songea is over 200 miles west of Massassi.

of this move to him. Taking six companies and two guns, he marched from Mahiwa on the 19th and, picking up the three companies that had been driven from the Mission, attacked on the 21st. This attack was beaten off with considerable loss to Lettow and he retired to Chiwata. It had been the intention of G.H.Q. for the Kilwa force column at Lukuledi Mission to join hands with the Lindi force and transfer its line of supply to Lindi. As the Lindi force could not at the moment advance beyond Mahiwa and as the supply and transport position of the Kilwa force would not permit of the column at the Mission being supplied any longer so far ahead, it had to be withdrawn to Ruponda on the 23rd.

In this case Lettow's reinforcement of Wahle not only stopped the advance of the Lindi force at Mahiwa but frustrated the plans of G.H.Q. to concentrate a superior force on the Mahiwa-Massassi road. Lettow's move from Mahiwa to Lukuledi Mission was his last attempt to make use of an operation on interior lines. When the Kilwa and Lindi forces moved forward on the 6th November, Lettow had to devote all his energies and skill to avoid being cut off from his retreat into Portuguese East Africa.

During the five months from June to October Lettow had carried out seven distinct operations on interior lines. In only one of them was he successful in altering the course of operations in his favour, namely, his reinforcement of Wahle, at Mahiwa. At Naitiwi he was successful in surprising a detachment. Twice, at Nurunyu and Lukuledi Mission, he was in time to bring his force into action, without however affecting the operations. Three times, at Narungombe, towards Tunduru, and at Ruangwa, he was too late to effect anything.

Commenting on his failure to be in time to effect anything at Narungombe, he gives an opinion which is worth recording. "For me," he says, "the operation at Narungombe was a further proof how difficult it is in the unknown African bush and in face of the uncertainty of communications, even if other circumstances are favourable, to carry through an operation in which several columns are taking part, so as to secure the necessary unity of action on the battlefield. . . . My belief was strengthened that if I wanted to use different bodies of troops in one operation it was necessary to secure the closest concentration first."

No more accurate criticism could be made of the reason for the failure of the only operation on interior lines attempted by ourselves during the same period. The story of that part of the action of Mahiwa from October 15th to 18th, in which the Nigerian brigade and Lettow's reserve took part, is so little known, that it is worth reconstructing the picture with the help of accounts which now exist on each side.¹ All the more so because the account in General Van Deventer's despatch of January 21st, 1918, gives the impression that the action fought by the Lindi force was brought about by an endeavour to relieve the precarious situation of the Nigerians. As will be seen, the advance of the Lindi

¹ "With the Nigerians in German East Africa," Downes. "My Reminiscences of East Africa," Lettow.

force was not so much to extricate the Nigerians as to keep to its side of the plan for a simultaneous attack on the front and rear of Wahle's position.

According to General Van Deventer's despatch the Nigerian brigade was sent from Nahungo "across country to assist the Lindi force by cutting off the enemy's line of retirement." The Nigerian brigade, consisting of the 1st, 2nd, and 4th battalions, the Gambia company, a battery of four guns, Stokes gun section and a wireless section, left Nahungo on October 3rd. On October 6th the brigade received a message stating the Lindi offensive would recommence on the 8th. At this time the Lindi force seems to have been about 10 miles N.E. of Nyangao. On October 9th the Nigerians were located about 25 to 30 miles (as the crow flies)¹ north of Nyangao by a British aeroplane, which dropped a message that they were now under the orders of General Beves, commanding the Lindi force. On the same day a wireless message was received from General Beves ordering them to make for Mahiwa. On October 10th a further message referred to Mahiwa as their objective in rear of the enemy's force. On October 13th General Beves reported that Mahiwa was only lightly held, and did not credit the information obtained by the Nigerians that strong forces were in its vicinity. Insistence was placed on a rapid advance in order that their arrival should synchronise with the frontal advance of Lindi force, which was timed to commence on the 15th. Lindi force, on the 13th, was, apparently, about seven miles from Nyangao, which was under three miles from Mahiwa. The Nigerians were also now ordered to send one battalion on Nyangao and to attack Mahiwa with the remainder at dawn on the 15th. By the evening of the 14th the Nigerians had been unable to get nearer to Mahiwa than the Namupa Mission after a very trying march. The Mission was three-and-a-half miles from Nyangao, and four-and-a-half miles from Mahiwa. On October 15th, therefore, began the operation in which Lindi force was to attack Wahle's position on the Nyangao river, while the Nigerians attacked Mahiwa three miles in his rear, sending at the same time one battalion on Nyangao itself.

In the early morning of the 15th, Colonel Mann moved on Mahiwa with the 2nd and 4th battalions, two guns, a Stokes gun section and his wireless. The Nigerian battalions averaged about 320 rifles. His advanced guard met with opposition at once. It would appear from Lettow's account that the force opposed to Colonel Mann was, at any rate in the beginning, Lieutenant Methner's company, placed by Wahle in reserve behind his left flank. By about midday Colonel Mann's column was held up on the north side of a loop of the Mahiwa river, and still about one mile from Mahiwa. On receipt of orders from General Beves to push on, Mann tried to find the enemy's flank to the east. The company sent on this reconnaissance met with severe opposition and had to fall back. It was now about 4.30 p.m., and


¹ As an indication of the difficulty of the country traversed it should be noted that a supposed 13 mile march on October 10th took 10½ hours to complete.

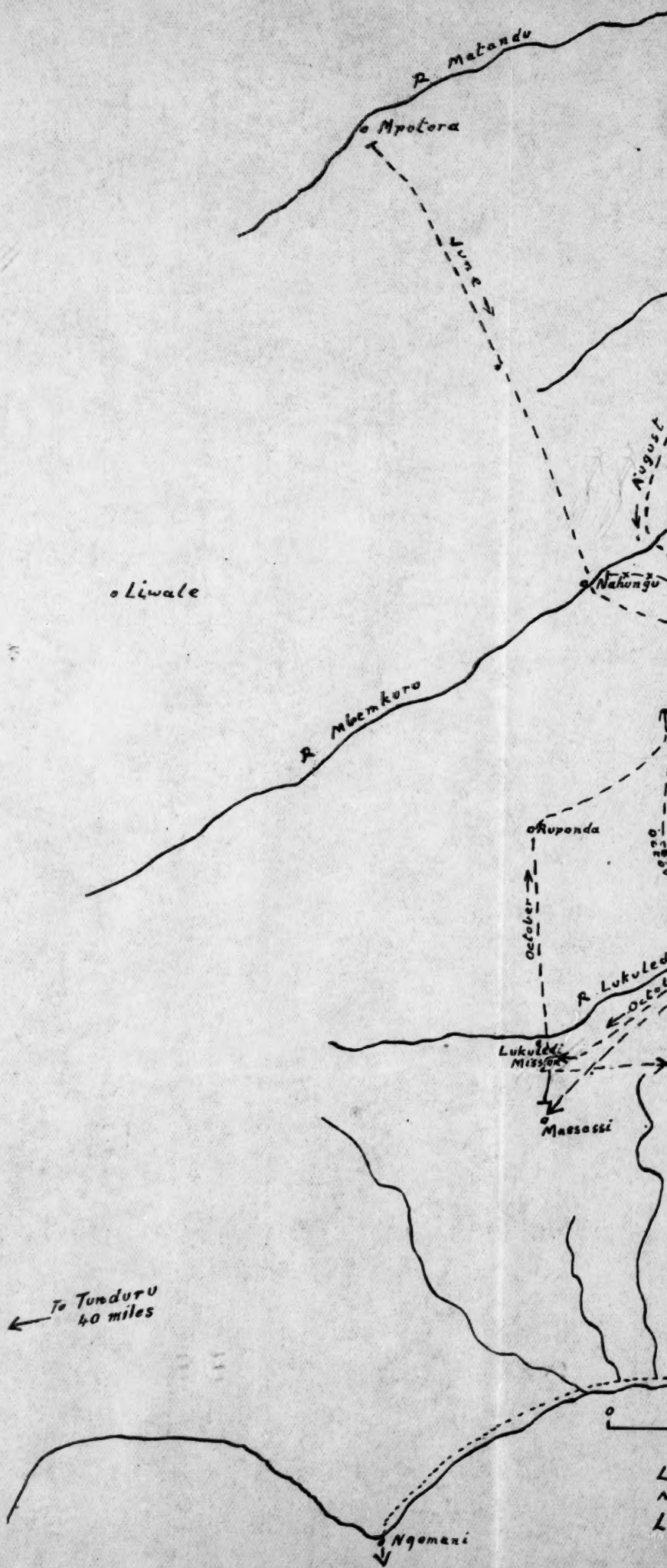
Mann was attacked in front and on his right flank from 5 to 6 p.m. and again at dusk. It was in this last attack that some of Lettow's companies took part. He tells us that before dark on the 15th he reached Lieutenant Methner's company and that the enemy seemed to be attacking Methner's company with a view to enveloping it. The first two of Lettow's companies to arrive were immediately thrown in, and the enemy driven back.

Meanwhile the 1st battalion of the Nigerians with two guns, leaving one company at the Mission to look after the baggage, ammunition column and ambulances, but taking the Gambia company with them, had moved under Major Roberts on Nyangao. They became heavily engaged and took up a position about half way to Nyangao, where they were suitably placed to block any retreat north-westwards from Nyangao. In doing this, they were carrying out the mission which General Van Deventer's despatch says was given them. During the 15th October Lindi force seem to have made no progress, for it was not until some time on the 16th that Wahle fell back a couple of miles to a ridge behind the Nakadi river bed. On the morning of the 16th Lettow went out to reconnoitre Mann's position and decided to launch an attack at noon on the north side and try to turn the flank. After the midday meal this plan was put into action and Captain Goering, who was to lead the attack, advanced with his two companies. To Lettow's surprise Goering changed direction to the north and came into action. The reason of this (to Lettow, surprising) move was that Goering had come unexpectedly upon a new enemy. Lettow states that the new enemy was a force of several battalions of the Nigerian brigade. Whether Lettow includes Mann's battalions in this statement is not clear. What had happened was that early on the 16th Major Roberts had had a message to retire on the Mission and reinforce Mann. Roberts got back to the Mission at 11, cooked rations, and moved out at 1 p.m. to join Mann, followed by the ammunition column, ambulances and baggage. The advanced guard hearing Mann in action and hoping to come in on the enemy's flank or rear, hurried forward only to find itself heavily attacked within a mile of Mann's position. The Nigerian account credits Lettow with knowing of their approach and laying an ambush. We know now that the meeting was equally unexpected by the enemy. Lettow supported Goering with the rest of his force, and by 4 o'clock had driven Roberts back a mile, after some severe fighting. The action then seems to have been broken off, and Roberts retired on to the Mission. Meanwhile Mann discovered that he was surrounded and cut off from the Mission, but he was not subjected to any attack during the forenoon. At 2.30 p.m., however, gun-fire began which increased in accuracy as the afternoon wore on, and between 4.30 p.m. and dusk two attacks were repulsed. The night, however, passed in quietness. There is no doubt that Lettow drew off his companies to reinforce Wahle against the attack which was obviously coming from the Lindi force on the next day. On the 17th, Lindi force began the attack on Wahle's

position along the ridge behind the Nakadi river bed, but, though continued throughout the 18th, failed to make headway. On the 19th, Lindi force drew back to Nyangao. Meanwhile on the 17th it had become possible to withdraw Roberts's detachment from the Mission, but Mann remained cut off, foodless, practically waterless, and with a large number of wounded. He was not, however, attacked, though he suffered from machine gun fire and sniping all day. On the 18th Lindi force got touch with Mann round Wahle's left flank and was able to assist his withdrawal to Nyangao.

So ended the British attempt at an operation on interior lines whereby a force was to be brought across a hundred miles of country to take the enemy in rear. We must acknowledge, with Lettow, that, in bush warfare, to use different bodies of troops in one operation it is necessary to secure the closest concentration first.





SKETCH MAP ILLUSTRATING MOVEMENT
IN EAST AFRICA



App. Scale 1 : 1,000,000

Lettow's marches - - - - ->
 Nigerians' march - x - x - x ->
 Lettow's retreat in Nov.

MOVEMENTS ON INTERIOR LINES
 CAMPAIGN 1917.

LUDENDORFF ON CLERKING.

(The following is a translation of a document captured during the late war. It emanated from the office of the Chief of the General Staff of the Field Army and is dated at General Headquarters, 1917.)

THE paper work of the Army is becoming more and more of a tactical danger. With ever widening scope, it is affecting independence, initiative, interest in the service, and even reliability and honour.

The conflict with the "Paper drum-fire from the rear," as the Front calls it, must be conducted more energetically than hitherto. The higher a staff is the more it must test every single instruction, every telephone message and every verbal direction in order to ascertain if and to what extent clerical work is thereby entailed in subordinate staffs.

It is, in the first place, the duty of all branches immediately connected with the Supreme Command to act in conformity with this. I lay great stress on the following points:—

(1) The special service branches have as a rule a particularly extensive clerical system. Complaint is made that every new service authority immediately issues a quantity of instructions, requires numerous returns, messages and reports, and sends out the results of its experiences.

All this, of course, involves multiple copies, as all the offices through which the correspondence passes wish to retain one.

Many such returns, etc., serve only for completing the files or for statistical purposes, but have little practical value.

I therefore require that these branches should cut down paper work to the lowest limit possible.

(2) No value is to be attached to the form used for a return, etc. Clearness is requisite, but it must not lead to waste of labour and material, so often noticed, for example, in the production of maps and sketches, or in aeroplane albums. I further direct that energetic steps shall be taken to prevent correspondence from being continued with superfluous questions asked merely for formal or unimportant technical reasons.

Reports of the execution of orders and nil returns are only to be required in important cases. References to former orders are if possible to be replaced by a short summary of their contents; this will save much office work.

(3) The many incomprehensible abbreviations which have become a sort of joke appear to be a considerable handicap on official correspondence. "Regt." for "Regiment," "Genkdo" for "Generalkommando" (Corps Headquarters) are quite clear to everyone. On the other hand words such as "Lubia"—(Luftbildabtheilung) (Aerial photography section) "Indegar"—(Inspektion der Gasregimenter),

(Inspector of Gas Regiments), "Fewa"—(Feldwetterwarte) (Field meteorological Observatory) and numerous others are unintelligible to the uninitiated. The more new organisations are formed and their *personnel* changed the greater are the difficulties created by these designations.

Consequently I expressly forbid the use of these abbreviations in my immediate sphere of command, and urgently request that corresponding action may be taken in other spheres.

(4) Complaints that too short a period is allowed for the return of reports in circulation are general. Here it may be presumed that the highest staffs are not blameless. Doubtless these and other troubles are not new; but it is not enough to recognise them, they must be earnestly combatted.

This circular will be distributed to the staffs and branches of the Supreme Command which are in my Department; I have forwarded copies to all Army Headquarter Staffs with the request that they should act similarly in their own spheres, and, if necessary, report with a view to action being taken from here if required. The Departments of the Ministry of War will also receive copies with the request to limit the administrative correspondence so far as feasible.

By Order,
(Signed) LUDENDORFF.

COPY FOR ACTION.

I would again impress the importance of simplifying tactical correspondence in so far as messages, maps, reports, written plans for all contingencies, results of experience, etc., are concerned.

The fighting troops often give utterance to the reproach that the higher staffs, and in particular the special services with a technique of their own, are too much concerned with statistics, meddle with too many details by paper correspondence and thereby lose touch of reality and the troops. This is a warning to all.

It is the *spirit* of the *troops* which brings the final decision, and that must suffer if the present state of affairs is not remedied.

By Order.
(Signed) LUDENDORFF.



THE GERMAN DEFENCE OF COMBLES.

SEPTEMBER, 1916.

(Extracted from an article by General Balck, in Vol. II. of "Im Felde Unbesiegt." General Balck, at the time of the Battle of the Somme, commanded the 51st Reserve Division.)

THE 51st Reserve Division had since the autumn of 1914 occupied a quiet sector in Flanders; during August, 1916, rumours had been rife of an approaching transfer elsewhere, but secrecy was carefully preserved as to its destination until mid-September, when the G.O.C. was informed in confidence that he and his command were bound for the Somme. On proceeding with a few of his staff to the First Army, he was told that his destined sector was the town of Combles—a place completely ruined by enemy bombardment, and outflanked on either side by the advanced positions of his infantry. The ground for miles round was nothing but a field of craters, though shelter might be found in the deep catacombs beneath the houses of the town. In all this sector, trenches, dug-outs, wire, communications, had been blown out of existence; the infantry, to conceal their position from hostile aeroplanes and artillery observers, had to establish themselves as best they could in lines of shell-holes. Rear lines of defence did not exist; supplies and munitions, owing to the continuous hostile barrage, could be brought up only by night.

All these novel conditions were described by the G.O.C. to his subordinate commanders before the taking over of the sector. He recommended them to pay close attention to co-operation with their neighbours and with the artillery; and immediate counterstrokes to recover any lost position. He also asked for reports to be sent back as frequently as possible by all available means.

The relief of the 185th Division had to be carried out hastily, most of the units of the former being taken out of line in Flanders during the night and next day despatched southwards to quarters behind the battlefield. The 51st Reserve Division thus took over the reserve line on the third, and the front on the fourth night after the issue of the first orders for the move.

The sector taken over extended for some 3 miles from right to left, between Morval and Combles; the enemy were in very superior numbers (6 to 1 at least) and consisted both of British and French, the point of junction between their armies being opposite the 51st Reserve Division front. All day long the hostile fire, skilfully directed from the air,

continued against the German positions; the artillery at the latter's disposal (18 field batteries and 56 heavy guns) was insufficient to counter it effectively. The infantry of the defence, therefore, could only work at night, and were exposed throughout the daylight hours to the destructive effect of hostile bombardment. The British and French, who were kept far back and only brought up shortly before the opening of their attacks, thus had both morally and materially a great advantage.

After fierce fighting, lasting from September 12th to 16th, the Allies, though they had worked well forward on both sides of Combles, had failed to compel its evacuation; they, therefore, determined to devote their next operations to the capture of the town and of its garrison, in the same way as they had invested and secured Guilleumont a few days previously despite all efforts to relieve it.

The taking over of the front was in every case carried out successfully, and so close together were the opposing forces that once our infantry had established themselves in the front line they suffered but little from the hostile guns, who devoted their attention mainly to the second and third positions in rear. Each regiment of the Division had one battalion in line, one in reserve, and one resting. On the right, in touch with the left of the 52nd Reserve Divisions, the 236th Reserve Regiment held Morval, then came the 235th and 234th Reserve Regiments; the latter in Combles. This gave about 1,200 rifles in line, or one to every 4½ yards; there were very few machine guns available. Opposed to this thin line were 5 French and British Divisions, all good troops; among the latter were Guards, Canadians and Scotch, with others in reserve, and cavalry behind. From deserters' reports and other information it was clear that a strong attack was in preparation.

On September 20th the British captured and consolidated a portion of the line held by the 52nd Reserve Division, and on the 22nd the French drove the 213th Division (on the left of the 51st Reserve) from the sugar factory south of Combles. Next day there began a violent bombardment of the German positions, which continued for the next day, but partial attacks by the Allied infantry were repulsed. Early on September 25th it became clear that the expected large scale attack was about to take place; barrages were laid down on the German front lines, and the infantry assault began at 9.30 a.m. in the sector of the 213th and 52nd Reserve Divisions, and on that of the 51st Reserve Division about mid-day. The advance was accompanied and assisted by swarms of low-flying aeroplanes.

South of Combles the French stormed Priez farm, driving back the 213th Division and, continuing their advance, occupied Rancourt. Combles itself was not attacked, but serious pressure made itself felt against Morval and the front north of it, and here again the German line gave way; numerous prisoners were lost, and the line to the south was gradually rolled up. Morval itself was desperately defended by a handful of gallant men and held out till after 5 p.m.; the British

infantry then worked its way forward into the German battery positions, and a number of guns had to be abandoned, the *personnel* of the batteries falling back with the infantry towards Sailly.

By this time a wide gap had opened between the flanks of the 52nd and 51st Reserve Divisions, and the position of the garrison of Combles, only some 700 rifles strong, became hourly more precarious. The town had been violently shelled all through the night of the 24th/25th, and only with great difficulty could food and water be got up to the garrison. Early in the morning the Allied fire increased to a regular barrage, which proved most destructive in its effects. Towards evening it became clear to the major in command of the town that the German line to the north had been forced back, and this was soon confirmed by a report of the loss of Morval. Accordingly orders were issued for the evacuation of Combles that same evening. By 7 p.m., indeed, the positions of the 234th and 235th Reserve Regiments, outflanked by the enemy on both sides, were absolutely untenable.

The reserve battalion of the Division (IIIrd/235) had early in the afternoon been ordered to retake Morval, but did not reach Sailly on its way to the front till 10.30 p.m., when it was too late to carry out the attack. It was used, therefore, to fill up the gap between the 52nd and 51st Reserve Divisions. The withdrawal of the troops from Combles began at about 8.30 p.m. and the front lines were evacuated about 10 p.m.; the enemy apparently suspected nothing, and the movement was carried out in good order and without serious losses. The Germans re-established a fighting front west of Sailly which, however, had no great power of resistance; fortunately, the Allies only occupied Combles at midday of the 26th.

About 8 a.m. on that morning, the bombardment of the German front line was resumed and was followed by an infantry attack in the afternoon, supported by tanks. This was effectively repulsed, although several times renewed; one of the tanks was set on fire and destroyed. Again on the 27th further partial assaults took place at various points of the German line. Part of the front of the 213th Division in front of Rancourt was carried by the enemy; but Sailly, which at one time seemed endangered, held firm, despite continued Allied efforts to capture it both on September 27th and 28th. On the evening of the latter day the 51st Reserve Division was relieved and sent back to rest behind the lines. During its period of fighting it had lost 64 officers and 2,304 men, without counting a number of slight gas casualties. Of these, 11 officers and 242 men, mostly wounded, had fallen into the hands of the enemy.

NAVAL NOTES.

THE ROYAL UNITED SERVICE INSTITUTION.

Attention is invited to the following extract from an Admiralty order which relates to this Institution:—

" Their Lordships desire it to be known that they wish to give every encouragement to Officers to join the Institution and to take part in its Essays, Lectures and Debates."

GREAT BRITAIN.

ADMIRALTY CHANGES.

Mr. Ramsay MacDonald resigned office on 4th November, and Mr. Stanley Baldwin accepted His Majesty's invitation to form a new Government. In the new Government the portfolio of First Lord of the Admiralty was allotted to the Right Hon. W. C. Bridgeman, M.P., who was Home Secretary in Mr. Baldwin's previous administration. Mr. J. C. C. Davidson, C.H., C.B., has been appointed Parliamentary and Financial Secretary to the Admiralty, in the place of Mr. C. G. Ammon; and the Earl Stanhope, Civil Lord of the Admiralty, in the place of Mr. Frank Hodges. The patent, with the name of Mr. Bridgeman substituted for that of his predecessor, Viscount Chelmsford, was dated 7th November.

On resigning the position of First Lord, Viscount Chelmsford conveyed to all ranks and ratings of the Royal Navy and Royal Marines his admiration of their splendid keenness, discipline, and efficiency. " My short tenure of office," he said, " has prevented me from seeing as much of the practical work of the Fleet as I should have wished, but what I have been privileged to see makes me fully confident in the future of the great Service with which I am proud to have been associated."

THE FLAG LIST.

NEW COMMANDS.—On 19th December, the following changes in flag appointments and commands were announced by the Admiralty:—

Vice-Admiral Sir Roger J. B. Keyes, Bt., K.C.B., K.C.V.O., C.M.G., D.S.O., LL.D., D.C.L., to be Commander-in-Chief of H.M. Ships and Vessels on the Mediterranean Station, in succession to Admiral Sir Osmond de B. Brock, K.C.B., K.C.M.G., K.C.V.O., to date 15th May. Admiral Keyes will assume command about 7th June.

Vice-Admiral Sir Frederick L. Field, K.C.B., K.C.M.G., to be a Lord Commissioner of the Admiralty and Deputy Chief of the Naval Staff, in succession to Vice-Admiral Sir Roger Keyes, to date 15th May. Vice-Admiral Field joins the Admiralty for temporary service on 30th April.

Vice-Admiral the Hon. Sir Hubert G. Brand, K.C.M.G., K.C.V.O., C.B., to be Naval Secretary to the First Lord of the Admiralty, in succession to Rear-Admiral Michael H. Hodges, to date 16th April. Vice-Admiral Brand will join the Admiralty for temporary service on 16th March.

Rear-Admiral Michael H. Hodges, C.B., C.M.G., M.V.O., to be Flag Officer Commanding the Third Battle Squadron, and Second-in-Command, Mediterranean

Fleet, in succession to Rear-Admiral Hugh D. R. Watson, C.B., C.B.E., C.V.O., to date 16th April. He will assume command about the end of May.

Rear-Admiral Sir Alfred E. M. Chatfield, K.C.B., K.C.M.G., C.V.O., to be a Lord Commissioner of the Admiralty, Third Sea Lord, and Controller, in succession to Rear-Admiral Cyril T. M. Fuller, to date 30th April. Rear-Admiral Chatfield joins the Admiralty for temporary service on 31st March.

Rear-Admiral Cyril T. M. Fuller, C.B., C.M.G., D.S.O., to be Rear-Admiral Commanding the Battle Cruiser Squadron, Atlantic Fleet, in succession to Vice-Admiral Sir Frederick L. Field, to date 30th April.

On 7th October, the selection was announced of Rear-Admiral Bertram S. Thesiger, C.B., C.M.G., to be Admiral-Superintendent of Portsmouth Dockyard, in succession to Vice-Admiral Sir Edmond P. F. G. Grant, K.C.V.O., C.B., to date 13th January, 1925. Sir Edmond had held this post since 30th September, 1922.

On 2nd January, 1925, there were announced the appointments of Rear-Admiral William A. H. Kelly, C.B., C.M.G., M.V.O., to be Rear-Admiral Commanding the Second Cruiser Squadron, in succession to Rear-Admiral Thomas D. Gilbert, C.B., to date 15th May; and of Rear-Admiral Francis H. Mitchell, C.B., D.S.O., to be Rear-Admiral in the Second Battle Squadron, Atlantic Fleet, in succession to Rear-Admiral William H. D. Boyle, C.B., to date 3rd May.

CHANGES.—The death on 22nd October, at the age of 53, of Rear-Admiral Sir George Henry Baird, K.C.B., was received with widespread regret. Sir George was invested with the insignia of a K.C.B. by Admiral Sir Henry Oliver, on behalf of His Majesty, in the Atlantic Fleet flagship "Revenge" in August last, at which time he was Rear-Admiral Commanding the Destroyer Flotillas of the Fleet, in the "Coventry." In the vacancy caused by his death, Captain D. T. Norris, C.B., C.M.G., A.D.C., was promoted to Rear-Admiral, with seniority of 23rd October.

The only other changes on the active Flag List during the quarter were dated 1st January, 1925, and were brought about by the retirement, at his own request, of Vice-Admiral Sir John F. E. Green, K.C.M.G., C.B. Rear-Admiral Douglas L. Dent, C.B., C.M.G., was thereby promoted to Vice-Admiral, and Captain Henry W. Parker, C.B., C.M.G., late in command of H.M.S. "Repulse," to Rear-Admiral.

PERSONNEL.

SENIOR OFFICERS' COURSES.—The following are the official dates of courses for senior officers during 1925: *Technical Courses*—5th January to 6th March; 30th March to 3rd June; 17th August to 16th October; and 19th October to 18th December. *War Courses*—9th March to 10th July; 19th October to 26th February, 1926. Applications should be forwarded to the Admiralty through the usual channels, to arrive not later than a month prior to the commencement of the course it is desired to take.

NAVAL STAFF COLLEGE COURSES.—The next Staff College Course will begin on Tuesday, 15th September, 1925, and end on Friday, 9th July, 1926. Applications for this course should arrive not later than 1st May, 1925.

AUSTRALIAN CAPTAIN FOR CRUISER.—On 22nd October, Captain George F. Hyde, R.A.N., assumed command of the cruiser "Vindictive" at Chatham. This was the first time, under ordinary peace conditions, in which a Captain in one of the Dominion Navies had taken command of an Imperial ship. Captain Hyde had formerly been Second Naval Member of the Australian Naval Board, and

during the absence of Vice-Admiral Sir Allan Everett at the Imperial Conference of 1923 he acted as First Naval Member, with the rank of Commodore.

SUBMARINE BRANCH PERSONNEL.—The Admiralty have decided, it was stated in fleet orders in November, that the development of submarines has now reached such a stage that it is no longer practicable to adhere to the system of restricting service in them to volunteers, and that, although volunteers will be called for as hitherto and be given preference in selection, officers shall be appointed and ratings drafted for service in submarines as requirements may demand. The use of the term "Submarine Service" is liable to convey the erroneous impression that the submarines form a separate service. It is therefore discontinued, the phrase "service in submarines" being employed instead. Present periods of service for volunteers will be maintained, with the exception that these periods will not be varied by the Rear-Admiral (S.) save in very special cases. The period of service for ratings who do not volunteer will be three years.

LOWER DECK COMMENDED.—The Earl of Balfour, who was the principal guest at the Lower Deck Reunion Dinner at the Royal Hotel, Plymouth, on 7th November, said he thought even now the part played by the British Navy in the Great War was wholly underrated, not by those who suffered from it, but by those who benefited from it. They could not get them to understand how great was the defensive power of the British Fleet. "Because I feel how great is the contribution of the lower deck to this world result," said Lord Balfour, "I rejoice at the opportunity of having some direct personal intercourse with representatives of a class to whom we owe so much."

NAVY MEN AND ELECTIONS.—The question of the attitude of Naval officers and men towards elections was raised during the General Election campaign in October, when, in response to requests, the Admiralty made it clear that the temporary privileges granted for the 1918 election, when so many persons, normally civilians, were still under Naval discipline, had been withdrawn by A.F.O. 757, dated 28th March, 1924. Officers and men on full pay are not permitted to act as members of a candidate's election committee, nor to advocate a candidate's claim at a public meeting, nor in any way actively to prosecute a candidate's interest.

FROM A.B. TO MATE.—Among the candidates to undergo training for commissioned rank chosen at the annual selection in December was Q. P. Whitford, able seaman. This was the first occasion that a rating had passed direct from A.B. to acting mate, and was made possible by the recent concession that a man need not have been promoted to leading rate, although they are required to have qualified for this.

WELFARE COMMITTEE REQUESTS.—Among the list of general requests put forward at the central meeting of the welfare conferences, held at Portsmouth in 1924, was one that marriage allowance be paid to all ratings provided they are at least 21 years of age; that foreign service commissions should not exceed two years, and the scale of foreign service leave increased to 21 days a year; and that attendance at Divine Service on Sundays of all religious denominations be made optional.

SEAMEN'S UNCLAIMED BALANCES.—Publication was resumed in the *London Gazette* on 18th November of deceased sailors' unclaimed balances. This was the first list of the kind to appear since 1916, when publication was suspended owing to the war. The Admiralty desire to bring the issue of these lists to the notice of the public, as, failing proper claimants, the

unclaimed balances are eventually transferred to the funds of Greenwich Hospital. The list published on 18th November included the names of men who lost their lives in the "Bulwark," "Formidable," "Good Hope," "Monmouth," the three "Cressys," and other ships sunk during the first year of the war.

N.W. PERSIA CLASP.—With regard to the award of the Naval General Service Medal, with N.W. Persia clasp, to the officers and men who served in the Naval Mission under Commodore D. T. Norris, C.B., C.M.G., between 10th August and 31st December, 1920, a fleet order dated 7th November stated that the inscription on the clasp was to be altered to "N.W. Persia, 1920." Those clasps already issued were to be exchanged.

WAR MEDALS UNISSUED.—Attention was officially called in November to the considerable number of Naval War Medals remaining unissued belonging (1) To officers and men who had only home shore or harbour service during the war (a minimum period of 28 days' mobilised service, whether afloat or not, qualified for the naval award of this medal); and (2) To officers and men who participated in post armistice operations in North Russia and Eastern Baltic (1918-19), Black Sea and Bosphorus (1918-20), the Caspian (1918-19), and on mine clearance (1918-19), but who had no previous qualifying service. Many in the first of these two categories are issuable to men still serving who earned them as boys.

NEW CONSTRUCTION.

NEW BRITISH BATTLESHIPS.—The following particulars concerning the new British battleships "Nelson" and "Rodney," laid down in December, 1922, have been published during the past quarter, but have not yet received official confirmation:—Standard displacement, about 35,000 tons; length, 702 ft.; extreme beam, 106 ft.; mean draught, 30 ft.; main armament, nine 16-in., 50-calibre wire-wound guns in three triple turrets, situated in forward part of the ship; secondary battery, twelve or sixteen 6-in. guns, mounted in pairs in closed turrets; maximum turret gun range, about 40,000 yards; main armour belt, 14-in. thick; speed, about 21 knots.

NEW CRUISERS BEGUN.—The five cruisers authorised in the last Navy Estimates have all been laid down, the "Suffolk" at Portsmouth on 30th September; the "Cornwall" on October 9th, on the slip on which the "Frobisher" was built at Devonport; the "Cumberland" on 18th October, at the Vickers yard, Barrow; the "Kent" at Chatham on 15th November, and the "Berwick" at the Fairfield Co.'s yard, Govan, on 15th September.

H.M.S. "WARSPITE" is the first of the "Queen Elizabeth" class to be taken in hand to be fitted with "bulge" protection. She has been paid off at Portsmouth for an extensive refit.

THE FLEET AIR ARM.

COMMANDERS' FLYING COURSE.—With a view to assisting the permeation of the higher ranks of the Navy with some knowledge of air matters, and in particular of the general organisation, training, capabilities and limitations of air units, arrangements are now provided for a few naval officers of the rank of Commander to be lent to the Royal Air Force for a short period of service with air units at home, in order to obtain practical experience of the work of the air arm in all its various aspects. During the past quarter, two Commanders have been undergoing this course. The Air Ministry has agreed to take up to

six officers under this scheme. Officers receive full pay and allowances at naval rates, together with an additional allowance of six shillings for each day on which they are actually required to fly.

OFFICERS FOR FLEET AIR ARM.—As a result of experience gained during the recent course at Netheravon for naval officers attached to the Fleet Air Arm, it was found desirable in December to divide future courses into two parts, a senior and junior section, each lasting three months. Four courses have been arranged for 1925, the first being :—Junior section, 12th January to 15th April; senior section, May to July 30th. Thirty officers will be appointed to each course.

H.M.S. "EAGLE."—This aircraft-carrier was temporarily employed in carrying troops from Malta to Egypt. During the quarter a number of exercises in association with the Mediterranean Fleet were carried out by the flights embarked. She has now returned to England to refit.

H.M.S. "HERMES" has now joined the Mediterranean Command.

H.M.S. "ARGUS," attached to the Atlantic Fleet, has been employed in training pilots and observers for the Fleet Air Arm. Experimental flying also took place in November. (See also "Naval Co-operation"—Royal Air Force Notes, p. 164.

NAVAL OCCURRENCES.

THE PRINCE OF WALES'S AFRICAN TOUR.—It was officially announced last December that the battle-cruiser "Repulse," which was refitting after the world cruise of the Special Service Squadron, will convey H.R.H. the Prince of Wales on his tour to West and South Africa and to Argentina. The Prince travelled in her sistership, the "Renown," on his former tours—to Canada in 1919, Australia in 1920, and India and Japan in 1921-22. The following provisional programme has been approved :—Leave Portsmouth, 25th March; Bathurst, 1st April; Sierra Leone, 3rd-4th April; Sekondi and Accra, 6th-10th April; Lagos, 11th-22nd April; Cape Town, 30th April-16th July; St. Helena, 21st-23rd July; Montevideo, 31st July. H.M.S. "Repulse" will be commanded by Captain H. W. W. Hope, C.B., D.S.O., who succeeded Captain H. W. Parker, C.B., C.M.G., in command when the vessel was recommissioned on 31st December.

MOVEMENTS IN EGYPTIAN WATERS.—On 22nd November, Notes were presented to the Egyptian Government by Viscount Allenby, the High Commissioner, demanding redress for the assassination of the Sirdar, Sir Lee Stack, and the replies thereto not being entirely satisfactory, certain measures were taken. The Navy co-operated in this duty. The Customs buildings at Alexandria were taken over at four o'clock on the afternoon of 24th November by a detachment of Royal Marines from H.M.S. "Benbow," Captain J. M. Casement. There was no interference with the proceedings or with the subsequent administration. By the afternoon of the 24th, the following was the disposition of H.M. ships in the affected zone :—At Alexandria, Rear-Admiral H. D. R. Watson had the battle-ships "Iron Duke," "Valiant," and "Benbow." At Port Said, Rear-Admiral W. W. Fisher had the "Malaya," the flotilla leader "Malcolm," and the destroyers "Vivacious" and "Voyager." At Suez, Captain H. D. Hamilton had the cruiser "Caradoc" and the destroyers "Wryneck" and "Walrus"; and at Port Soudan there were the sloop "Clematis" and the destroyer "Vendetta," the former under Commander H. J. Woodward, D.S.O.

COMMISSION OF CONTROL ENDED.—On 30th September, the work of the Naval Inter-Allied Commission of Control came to an end, and the Commission

ceased to exist. Since January, 1923, when Admiral Sir Edward Charlton relinquished the post of President of the Commission, it had been under the charge of Captain the Hon. R. A. R. Plunkett-Erle-Drax, D.S.O.

AUSTRALIAN EXCHANGE OF SHIPS.—The departure of H.M.A.S. "Adelaide" for Australia *via* the Suez Canal was delayed until January, 1925, by repairs at Portsmouth Dockyard. Accordingly, the arrangement for H.M.S. "Concord" to be detached from the Mediterranean Fleet to accompany her, and to be lent as a unit of the Commonwealth Navy for a few months, was postponed. The intention was that while this Imperial cruiser was attached to the Australian Fleet, H.M.A.S. "Brisbane" should be lent in exchange to the China Squadron of the Royal Navy. In addressing the "Adelaide's" crew, Lord Chelmsford said he felt confident that the arrangement for exchanges of ships which had been agreed upon by the two Governments would operate to the benefit of all.

AUSTRALIAN SEAMEN IN LONDON.—On 1st and 2nd October, the ship's company of H.M.A.S. "Adelaide," which accompanied the Special Service Squadron to England, were entertained in London as guests of the Admiralty. Arriving at Waterloo from Portsmouth, the 30 officers and 336 ratings, under Captain John B. Stevenson, marched to the Horse Guards Parade, laying a wreath on the Cenotaph *en route*, and were inspected by Lord Chelmsford, First Lord. The rest of the day was spent at Wembley. On the 2nd, motor coaches conveyed them to places of interest in London, including the Abbey and Houses of Parliament, Australia House (where the High Commissioner entertained them to luncheon), St. Paul's, the Tower of London, and the Mansion House, where the Lord Mayor entertained them to tea.

PORTSMOUTH MEMORIAL.—On 15th October, H.R.H. the Duke of York unveiled the Royal Navy War Memorial at Portsmouth, thus completing the scheme of the Imperial War Graves Commission for monuments at each of the three Home ports. The memorial is on Southsea Common, and forms a lofty seamark on the bearing used by ships crossing from the Isle of Wight through the Swashway Channel. About 9,700 officers and men, who "gave up their lives in defending our Empire and who have no other grave than the sea," are commemorated by the Portsmouth memorial.

END OF H.M.S. "MONARCH."—In accordance with the conditions of the Washington Treaty, H.M.S. "Monarch" has to be disposed of by 16th February, 1925, *i.e.*, 18 months after the formal ratification of the Treaty. Orders were therefore given for the ship to be used as a target and sunk by the Atlantic Fleet at the end of January. The "Monarch" was the last of the battleships due for scrapping under the Treaty.

HONOURS FOR "LAURENTIC" SALVAGE.—On 11th December, through port orders at Portsmouth, the Admiralty conveyed to the officers and men of the salvage ship "Racer" an expression of high appreciation of the indomitable spirit in which the hazardous operations of salving the gold from the wreck of the "Laurentic" were carried out in the face of great difficulties. The Admiralty offered their congratulations upon the successful result which the resource and perseverance of the officers and men of the "Racer" had brought about. Commander G. C. C. Damant, R.N., retired, who had charge of the operations, was promoted to Captain, R.N., retired, from 7th November, 1924. Mr. E. C. Miller, Warrant Shipwright, chief diver to the expedition, was ordered to have his promotion to Commissioned Shipwright expedited by one year; and accelerated

promotion was also given to certain ratings. Awards were also made of the medal of the Civil Division of the Order of the British Empire to eleven ratings.

MERCHANT SHIP SIGNALLING.—Continued progress in the efficiency of merchant ship signalling was shown by the extracts from the returns of exercises with H.M. Ships during the quarter ended 30th June, published at the end of October. There were 1,266 exercises carried out, as compared with 1,205 for the previous quarter. The percentage of failures was only 0.18, as compared with 0.29 per cent. for the quarter ending 31st March.

THE ROYAL TOURNAMENT will be held at Olympia from Thursday, 28th May, to Saturday, 13th June, 1925, inclusive.

ROYAL NAVAL CLUB, PORTSMOUTH.—The Committee has imposed an entrance fee of £4 as from 1st January, 1925.

FOREIGN NAVIES.

ARGENTINA.

DESTROYERS TO REFIT.—In addition to the battleships "Moreno" and "Rivadavia," it is also intended that the four destroyers of the "Catamarca" type shall be refitted and adapted to burn oil fuel only. The latter are German-built vessels, launched in 1910-11, and are of 950 tons, mounting three 4-in. guns and four 21-in. torpedo tubes.

BRAZIL.

NAVAL WAR COLLEGE.—Progress is reported in the work of a Naval War College run on similar lines to that of the U.S. Naval War College at Newport.

YOUNG OFFICERS' REVOLT.—On 4th November, 1924, during the absence on shore of most of their superior officers, five sub-lieutenants of the battleship "São Paulo" took possession of their vessel, hoisted the red flag, and put to sea after exchanging shots with the forts at Rio de Janeiro. On 10th November the ship put in at Montevideo, 1,100 miles south-west of Rio, and surrendered to the Uruguayan Government. The Minister of Marine, Admiral de Alencar, had meanwhile gone in pursuit, on board the "Minas Geraes." A torpedo-boat, the "Goyaz," at first joined in the revolt, but soon afterwards surrendered to the Government.

CHILE.

VESSELS SCRAPPED.—The protected cruiser "Presidente Errazuriz," employed for some years for the seagoing instruction of cadets and also in gunnery training, has been struck off the list. She was built at La Seyne in 1890. The torpedo boats of the "Ingeniero Hyatt" class, of which there were originally six, have also been scrapped. They were constructed in 1896-98, the first at Poplar, by Messrs. Yarrow, and the later ones shipped to Talcahuano and Valparaiso in sections.

DENMARK.

DISARMAMENT BILL.—Concurrently with a movement in Sweden for the considerable restriction of armaments, Denmark has before it a measure of disarmament. The bill for this purpose passed its first reading on 27th November, and discussions upon it in committee were to be conducted in secret. It provides for the abolition of conscription, and with it the Navy and Army, the places of which would be taken by a corps of 7,000 frontier guards and a number of armed vessels for policing Danish waters. The cost is to be £440,000, instead of £2,400,000.

FRANCE.

1925 ESTIMATES.—Submitted to the Chamber of Deputies early in December, the French Navy Estimates for 1925 amounted to 1,300 million francs, or about £15,500,000, being approximately equal to those for 1923 and 1924. The main objects in view were stated by the Reporter on the Estimates to be the regular progress of new construction, the reorganisation of the shipyards, the strengthening of the Fleet Air Arm, and the reconstitution of the *personnel*.

PERSONNEL NEEDS.—Improvements in pay and in service conditions are intended to attract more men to the Navy. Conscription and the voluntary system combined to furnish the 50,000 men needed in past years, but the decline in the total of volunteers has obliged the taking of men from military service, whose term of engagement is too short to permit of their becoming valuable afloat. Special methods of advertising the advantages of naval service beyond the seaport towns have been adopted.

FLEET STRENGTH.—Reconstruction over a period of twenty years is planned, the ultimate standard, based on the Washington Treaty, being 178,000 tons of ships of the line; 360,000 tons of light surface craft; 65,000 tons of submarines, or 90,000 including those for coast defence; and 150,000 tons of special vessels, minelayers and auxiliaries. Twenty years is taken as the effective life of ships of the line, aircraft-carriers and special craft; 17 years for cruisers; 15 years for destroyers; and 12 years for submarines.

MODERNISATION OF SHIPS.—The modernising of the battleships was begun in 1922, with the "Provence" and "Lorraine," and will be completed in 1926. In 1925 the "Bretagne's" 13.4-in. turret guns are to be given increased elevation. Six of the latest battleships are to be equipped with 75-mm. A.A. guns with high muzzle velocity and a number of 40-mm. A.A. automatic guns. These ships are also having their fire control system brought up to date. The alteration of serviceable submarines will be completed by the end of 1926.

10,000-TON CRUISER BUILDING.—Two new cruisers, the "Duquesne" and "Tourville," have been laid down. They will displace 10,000 tons, have a length of 607 feet, beam of 63 feet and a speed of 33 knots. Their armament will consist of eight 8-inch guns, mounted in twin turrets, eight 2.9-inch A.A. and eight 3-pdr. guns, with six torpedo tubes. Only the conning tower will be protected. Four aeroplanes will be carried and launched by catapults.

NEW DESTROYERS.—Names have been chosen for the six 1,500-ton destroyers recently ordered as follows:—"Raillense," "Palme," "Mars," "Fortuné," "Alcyon," and "Adroit." These were names of ships commanded by Jean Bart. The new destroyer "Ouragan" was launched at Blainville, Caen, on 6th December. She is one of twelve vessels of 1,378 tons, 30,000 horse-power and 33 knots speed, armed with four 5.1-in. guns and two 2.9-in. anti-aircraft guns, with six 21.7-in. torpedo tubes. The radius of action at fifteen knots is 3,000 miles.

NAVAL CONSTRUCTOR'S DEATH.—The death was announced in October, at the age of 84, of the famous marine architect, M. Emile Bertin. In 1886-1890 he was lent to Japan, and was largely responsible for the fleet which defeated the Chinese Navy in 1891. He was afterwards in the Constructive Department of the French Navy, and displayed considerable talent in the design of ships of various classes. He also wrote a number of works on naval architecture.

NAVAL AIR SERVICE. (See Royal Air Force Notes, p. 169.)

GERMANY.

MANŒUVRES IN THE BALTIC.—Practically the whole German Fleet in commission carried out exercises off Swinemunde between 4th and 11th September; 3 battleships, 5 cruisers, 22 torpedo craft and 6 auxiliaries took part.

FLAG CHANGES.—Vice-Admiral Behncke, Chief of the Navy Department, has been relieved by Vice-Admiral Zenker, whose place as C.-in-C. of the Naval Forces has been taken by Vice-Admiral Mommsen.

LAUNCH OF THE "EMDEN."—The *Marine Rundschau* in November gave some new particulars of the vessel known as cruiser "A," which is building for Germany in accordance with Peace Treaty conditions, and which was launched on 7th January and named the "Emden." The details published are: 6,000 tons displacement, 150.5 metres long, 14.3 metres broad, with a draught of 5.3 metres. The nominal speed will be 29 knots. It is hoped to complete the vessel in the autumn of 1925.

ARMAMENT AND ENDURANCE.—The main armament is given as two (not eight) 5.9-in. guns, so arranged that all may be fired on the broadside simultaneously, while allowing improved ahead and astern fire. The general design is an improvement on the "Leipzig," but with considerable technical advances. In view of foreign cruises where coal only would be available, the ship will burn two-thirds oil and one-third coal. The economic radius is to be 6,500 nautical miles.

GREECE.

NEW BRITISH ADVISORY MISSION.—Vice-Admiral Sir Richard Webb, K.C.M.G., C.B., has been lent to the Greek Government to carry out an inspection of the Greek Navy and report on its future. He arrived at Piræus on 7th December, and was cordially welcomed by the Minister of Marine. Unlike previous heads of British Naval Missions to Greece, who were appointed for extended periods, Sir Richard Webb was only invited to render a report advising the Greek Government as to how the Navy should be reorganised and run in the future. In an interview on 7th January, Sir Richard was reported to have expressed a very favourable opinion of the intelligence, capacity and seamanlike qualities of the Greek seamen, and he remarked that several Greek officers, including the President's son, had studied on board British ships or in British training establishments. The Vice-Admiral expected that his work of reporting on the Greek Fleet would finish in a few weeks.

ITALY.

LESSONS OF THE MANŒUVRES.—It is reported that the results of the manœuvres were an unqualified success for the National (Blue) forces, which it is considered demonstrated the possibility of maintaining communication with the African colonies without undue risk or loss if opposed by a fleet of equal naval strength; but it seems questionable whether the Admiral commanding the Enemy (Red) forces made the most of his chances.

The value of submarines was particularly emphasised.

FAILURE OF AIR SERVICES.—The Naval authorities severely criticise the present system whereby the Italian Navy is shorn of its own air service, and point to the failure of aircraft to be of service to either side during the manœuvres.

DESIGNS OF 10,000-TON CRUISERS.—The main details of the new 10,000-ton cruisers, to be named "Trento" and "Trieste," have been made public. In

general, they will be similar to the French ships, but will have a more powerful anti-aircraft armament, consisting of twelve 4-in. A.A. guns.

VISITS TO BRITISH PORTS.—The cruiser "Campania" left Jeddah on 29th November for Kismayu, British East Africa, and on her return voyage was ordered to stop one day at Zeila. This vessel, designed for Colonial service, has the heavy armament of six 6-in. guns on a displacement of 2,480 tons, but was designed for only 16½ knots speed, which was not attained on her trials. Other vessels of the Italian Navy expected to visit British ports were the torpedo-boat "Casseopea," Haifa (five days) and Alexandria (ten days); and the torpedo-boats "A. Mosto" and "S. Schiaffino," to visit Aden early in January, 1925.

JAPAN.

NAVAL MANŒUVRES.—During October, 1924, manœuvres on an extensive scale were carried out and lasted over three weeks. The Third Fleet was specially commissioned from the Reserve and acted as the Defending Force. The First and Second Fleets represented an enemy advancing from a base to the southward.

The first ten days were devoted to preliminary drills and training, the remainder of the time to the actual operations. No details have yet become available, but it is known that nearly two hundred ships took part in these manœuvres.

NEW CONSTRUCTION.—During 1924 the following warships have been, or will shortly be, completed: 3 cruisers ("Sendai" class, 5,570 tons), 4 destroyers (1,400 tons), 2 destroyers (900 tons), 9 submarines.

There are at present under construction: 3 cruisers (7,100 tons), 1 cruiser (5,570 tons), 5 destroyers, 12 submarines, 4 auxiliaries.

10,000-TON CRUISERS.—A second large cruiser, the "Myoko," is about to be put in hand; the "Nachi" was laid down some time ago. It is reported that two more of the same type are also to be built.

TARGET SHIPS.—The old battleships "Satsuma," "Aki" and "Hizen" (ex-Russian "Retvizan") have all been used as target ships and sunk by gunfire. The "Iwami" (ex Russian battleship "Orel") has been sunk by bombing.

REPAIR SHIP LOST.—On 12th December, during a thick fog, the "Kwanto," captured from the Russians in 1904, and employed as a depôt-ship and repair vessel, ran aground on a reef near Odawara, 30 miles south-west of Yokohama. About a hundred of the crew of 150 were reported to have lost their lives, as the vessel broke her back, and boats from the ship were also smashed on the rocks. The "Kwanto" was of 10,000 tons, built in 1898, and was formerly the Russian steamship "Manchuria."

NETHERLANDS.

CRUISE OF "K. X." SUBMARINE.—The new submarine "K. X." was reported to have visited Aden and Colombo in November and December *en route* to the Dutch East Indies. These boats with the letter "K" (Kolonien) belong to the East Indian Marine, and the first of the series, "K. I.," was built at Flushing in 1913. "K. X." has a displacement of 570 tons on the surface, and 715 tons when submerged. Her armament includes one 3·4-in. gun and six torpedo tubes.

RUSSIA.

REPORTED BUILDING PROGRAMME.—There have again been reports during the past quarter, of a conflicting character, of a building programme said to have

been adopted by the Soviet Government. In the Latvian Press, it was stated that during the next four years there would be provided:—For the Baltic: Two light cruisers, four destroyers, seven submarines and three armoured anti-submarine craft. For the Black Sea: One light cruiser, eight destroyers, twelve anti-submarine craft and six minesweepers. For Pacific waters: Four gunboats. For Arctic waters: Two gunboats. Other reports spoke of a programme spread over seven years, and of the vessels for the Baltic being constructed at the Putilov works; while the vessels for the Black Sea were represented to be: Four cruisers, eight destroyers and eight submarines.

"WHITE" SHIPS AT BIZERTA.—As a condition of the restoration of relations between France and Russia, negotiations for which were in progress during the quarter, the surrender of the ex-Russian warships under French protection at Bizerta was arranged. This Fleet, which General Wrangel handed over to the French Government in part payment of the advances made to him by France, at the time when, as Commander of the Army of South Russia, he was fighting against the Red forces, includes two battleships, two large cruisers, about ten destroyers, four submarines and some transports. On 26th November, it was announced that Rear-Admiral L. R. A. Exelmans, commanding the French naval forces at Bizerta, had refused to receive the mission from the Soviet Government which was on its way to examine and to take possession of these vessels. His refusal was based on the ground that the Moscow Government was at the back of the revolutionary agitation being carried on in Northern Africa. On account of this refusal, the Admiral was recalled by the French Government from his command.

UNITED STATES.

PACIFIC CRUISES AND MANŒUVRES.—The Battle Fleet of the United States Navy is to make a cruise to Australian waters in July, 1925. After the mobilisation of the entire U.S. Fleet at San Pedro, California, it will sail for Hawaiian waters, and the Scouting Fleet, usually in the Atlantic, will remain with the Battle Fleet in the Pacific from 27th April to 7th June. Manœuvres on a large scale will probably take place during this period. On 19th December, it was announced that, with a view to removing the misunderstandings among certain sections of the Japanese people, the American Government proposed that the American Fleet should visit Yokohama after the Pacific manœuvres. Japan is stated to have declined this proposal with regret.

CONDITION OF OLDER SHIPS.—A good deal of discussion as to the relative strength of the American Navy took place during the past quarter, largely turning upon the condition of some of the older battleships. On 10th December, in a report to the Sub-Committee on Naval Appropriations, Mr. Wilbur, Secretary of the Navy, said that "the most serious loss of fighting ability of our Fleet arises from the fact that the boilers of six of our older battleships have, as anticipated, deteriorated from age." The six ships were understood to be the "Wyoming," "Arkansas," "Florida," "Utah," "Texas" and "New York."

U.S.S. "WASHINGTON" SUNK.—On 25th November, the battleship "Washington," one of those scrapped under the Naval Treaty, was sunk off Virginia Capes as the result of bombing and gunfire. The "Washington" was authorised in 1916, laid down in 1919, and launched in 1921 a few weeks before the Disarmament Conference was opened.

NEW CONSTRUCTION.—Congress in December passed the Bill authorising the construction of eight new cruisers. On this subject, the Secretary of the Navy said :—" In order that the ratio provided in the Treaty for capital ships should be attained in all types of combatant ships, the eight cruisers provided for should be commenced in the fiscal year 1926, and four additional cruisers should be authorised to be commenced in the fiscal year 1927. Five fleet submarines already authorised, one aircraft carrier, and one floating dry dock, not yet authorised, should be authorised and commenced in the fiscal year 1926."

NEW CRUISER'S VOYAGE.—The new cruiser " Marblehead " in November carried out tests of her fire-control apparatus and made a successful run to and from Bermuda. Leaving Hampton Roads on 26th November, she proceeded on a " shakedown " cruise to Southampton, Marseilles, Algiers, Gibraltar and Funchal. The " Marblehead " is the last but one of the ten vessels of the " Omaha " type to be completed.

TURRET EXPLOSION.—One officer and thirteen men were killed as the result of an explosion in a turret on board the cruiser " Trenton " in Hampton Roads on 20th October. Reports that defective powder might have caused the mishap were denied in a detailed statement by Rear-Admiral T. C. Bloch, Chief of Ordnance, who showed that the powder issued to the " Trenton " was new powder, finished in 1922, and reports of tests of it, to the date of the explosion, showed it to be in excellent condition. It was conjectured that a defect in the ammunition hoist, which may have torn open one of the powder bags and by some friction ignited the ammunition, may have caused the accident, but full investigation was ordered to be made.

NAVAL AIR SERVICE.—(See Airship Notes, p. 173.)

MILITARY NOTES.

HOME.

THE ARMY COUNCIL.—Consequent on the change of Government, the Rt. Hon. Sir W. Laming Worthington-Evans, Bart., G.B.E., M.P., has returned to the War Office as Secretary of State for War and President of the Army Council. Colonel the Earl of Onslow, O.B.E., Reserve of Officers, is now Parliamentary Under-Secretary of State for War and Vice-President of the Council.

ROYAL COLONELS-IN-CHIEF.—In consequence of recent changes in the Indian Army there has been a number of new appointments of Colonels-in-Chief to Indian Regiments.

H.M. The King is now Colonel-in-Chief of the 1st Madras Pioneers, the 4th Bombay Grenadiers, the 10th Baluch Regiment and the 11th Sikh Regiment. H.R.H. the Prince of Wales has become Colonel-in-Chief of the 6th Rajputana Rifles, the 8th Punjab Regiment, the 12th Frontier Force Regiment and the 17th Dogra Regiment. H.R.H. the Duke of Connaught is Colonel-in-Chief of the 7th Rajput Regiment.

THE LATE MAJOR-GENERAL SIR LEE STACK.—The foul murder of the Sirdar of Egypt brought to a head a situation which had been fraught with peril for some time and resulted in strong action in that country by the British Government.

In this all three Services played a part, although the most serious responsibilities naturally fell on the Military authorities. The late Sirdar will long be remembered for his great services both to Egypt and the Sudan. These were such as to mark him out as a worthy successor to former great Sirdars like Gordon, Wood, Kitchener and Wingate.

NEW G.O.C. BRITISH FORCES IN CHINA.—In succession to Major-General Sir J. S. Fowler, K.C.M.G., C.B., D.S.O., the command of British Military Forces in China will be taken over by Major-General C. C. Luard, C.B., C.M.G. During the late war General Luard commanded the 9th Infantry Brigade in Egypt and Mesopotamia. Since then he has been in India.

THE ARMY COMMITTEE IN THE HOUSE OF COMMONS.—The newly elected officials of the Parliamentary Army Committee are: Lieutenant-Colonel H. H. Spender Clay, C.M.G., M.C. (chairman), Brigadier-General E. Makins, C.B., D.S.O., and Major Ralph Glyn, M.C. (hon. secretaries) and Major J. B. Cohen (hon. treasurer). A meeting of the Committee will be held early in February when Parliament reassembles.

GRANT OF THE GENERAL SERVICE MEDAL WITH CLASP "KURDISTAN."—The grant of the General Service Medal, 1923, with Clasp "Kurdistan" has been extended to the military forces employed in Kurdistan in 1923 under the command of Air-Marshal Sir J. M. Salmond, K.C.B., etc.

Under certain conditions the same Medal and Clasp will, in addition, be awarded to the troops who served with the forces under the command of—

(a) Colonel-Commandant B. Vincent, C.B., etc., between 19th March, 1923, and 18th June, 1923, both dates inclusive;

(b) Colonel-Commandant H. T. Dobbin, D.S.O., between 27th March, 1923, and 28th April, 1923, both dates inclusive.

(Army Order No. 387, 31st October, 1924.)

AFRICA GENERAL SERVICE MEDAL—EGBA OPERATIONS, NIGERIA, 1918.—The grant of the Africa General Service Medal and Clasp "Nigeria, 1918," has been made to the forces which took part in the operations against the Egba tribe in that year, between the dates 11th June and 31st July, inclusive.

The area of the operations is defined as being "in the vicinity of the Nigerian Government Railway (main line) from Abeokuta in the North to Lagos in the South, within the area bounded on the East by a line from Abeokuta through Ijebu—Ode to Lagos, and on the West by a line from Abeokuta to Ilaro and thence through Igbessa to Lagos." (Army Order 460, 31st December, 1924.)

REPLACEMENT OF LOST MILITARY DECORATIONS.—New provisions in the King's Regulations state that when the insignia of British Orders, other decorations, and medals are lost by a serving officer or soldier, entirely through unavoidable circumstances arising out of the exigencies of the service, these decorations or medals may be replaced at the public expense.

Campaign medals lost after the death of the recipient will not be replaced.

An officer no longer on the Active List may, after taking reasonable steps to recover a lost decoration or medal, submit an application for replacement on prepayment direct to the Under-Secretary of State, the War Office, but new insignia will not be issued until two months have elapsed from the date of the loss.

COMMISSIONS IN THE ARMY: *An Increase of Candidates.*—A substantial increase in the number of applicants for Commissions in the Regular Army has already resulted from the operation of the new regulations which open fresh channels of entry into the Army, and, in general, are designed to make the Service

more attractive to young men of ability and ambition. A hundred commissions a year are now offered to candidates nominated by 15 approved Universities in the United Kingdom, and at the half-yearly nominations last month more applicants were recommended than during the whole of the preceding 12 months; while, in addition, many were registered for future nomination. The age of University candidates must not be under 21 or above 24; but the regulations permit of commissions granted to such candidates being ante-dated on a liberal scale for the purposes of seniority, without prejudice to the interests of cadets in the Military Colleges. Those who, though intellectually qualified, are debarred on account of age from entering Sandhurst or Woolwich are thus able to attain commissioned rank without disadvantage.

The new regulations also offer approximately 60 commissions a year to Officers of the Territorial Army.

While the numbers coming forward for commissions is increasing, the idea still seems to prevail that considerable private means are required to enable an officer to live in the Army. Expenses naturally vary in different regiments and in different stations; and much also depends on individual tastes and habits. But many second-lieutenants are now living on their pay and allowances without the assistance of private means; and under existing conditions lack of private income should not necessarily be a bar to a successful career in the Army.

OFFICERS' TRAINING CORPS: *Administrative Changes.*—Considerable changes have been made in the organisation and administration of the O.T.C., and in accordance with these changes the Senior Division of the Corps will now be converted into Officer Cadet units and will become the normal channel of supply for officers, other than Regular Officers, on mobilisation in case of a national emergency.

All officers of the Corps will have, as individuals, the same liability for service as other officers of the Regular Army Reserve of Officers, Militia, or Territorial Army, and their services, on embodiment, will be at the disposal of the Army Council.

Facilities are now given to contingents to become affiliated to Territorial Army units for purposes of training and instruction.

REGULAR ARMY RESERVE OF OFFICERS: *The Railway Branch.*—It has been decided to increase the number of officers in the Railway Branch of the Regular Army Reserve of Officers by the appointment of an additional number of those who held temporary Royal Engineer Commissions in the Great War, and served with Railway Directorates or units overseas. A considerable number of officers of this class joined the Reserve on demobilisation, but it is believed that many more would be willing to serve if they realised that they were wanted.

The primary conditions of service are that officers should not be over 45 years of age; that they should be resident in the United Kingdom, and report annually, in writing, to the War Office; that they should be fit for general service anywhere, and be liable to be called out for service at Home or Abroad in a national emergency. No annual training in peace time is involved.

CANADA'S CHAMPION SHOT.—The King's medal with clasp "1924" for the champion shot of the Military Forces of the Dominion of Canada has been won by Corporal W. J. Livingstone, the Governor-General's Foot Guards.

UNVEILING OF GUARDS' WAR MEMORIAL.—At a parade service held on Sunday, 14th December last, H.R.H. the Prince of Wales unveiled the Memorial erected in the Royal Military Chapel, Wellington Barracks, to officers and other ranks of the Brigade of Guards who fell in the Great War.

THE 47TH (LONDON) DIVISION has decided to construct a novel memorial in France to the 15,567 men of the Division killed in the war. This is to take the form of a school playground for Martinpuich, the nearest village to High Wood, where the 47th Division won undying fame in the first battle of the Somme. The Mairie and school have been rebuilt, but in front of them is a piece of rough broken ground which it is proposed should be transformed into an open place and playground, surrounded by a fringe of trees and a low wall. On the gateway facing the road will be inscribed the battle honours of the Division with the divisional sign of the Star and a dedication to the fallen.

The memorial is to include a simple stone cross to be set up in High Wood itself. The existing wooden cross and that from Eaucourt l'Abbaye are to be brought home and set up at the Divisional Headquarters in Chelsea.

The whole scheme is expected to cost about £1,000, of which about £100 has already been given. Among those supporting the appeal are Lord Crewe, Lord Esher and Mr. R. Holland Martin, the President, late President and Chairman respectively of the Territorial Army Association of the County of London, and five past Commanders of the Division, and the present Commander, Major-General Sir William Thwaites.

The address of the Hon. Treasurer, 47th Division War Memorial, is 44, Temple Fortune Lane, London, N.W. 11.

TERRITORIAL ARMY.

NEW RECRUITS.—Returns of recruiting for the Territorial Army show that during the past two months 3,061 men have been finally approved for service, and that the strength of the Army, exclusive of permanent staff, on the 1st instant, was 141,728. The numbers still required to complete the establishments are 1,628 officers and 37,411 other ranks.

The best return last month, as in October, was made by the London District, which obtained 328 recruits. In the other Commands the figures for November were: Northern, 318; Southern, 309; Western, 286; Eastern, 241; Scotland, 171. Among the Divisions, in respect of strength, the Highlands stand first with 9,400 officers and men; while the Welsh comes second, with 9,151; the West Lancashire third, with 8,986; the Northumbrian fourth, with 8,860; the North Midland fifth, with 8,727; and the West Riding sixth, with 8,686.

REGIMENTAL COLOURS.—An Army Order states that the regimental colour of a Territorial unit is to bear the ancient badges, devices, distinctions and mottoes, as given in the Army List, which have been conferred by Royal Authority, except the battle honours of the Great War. These latter are emblazoned on the King's Colour. On both the King's Colour and the Regimental Colour the number of the battalion in roman numerals will be placed in the centre of the circle, except when that position is occupied in the King's Colour by the second title of the Regiment or in the Regimental Colour by the second title or a badge; in these cases it will be placed in the dexter canton.

YEOMANRY DRAGOON BATTLE HONOUR SCROLLS.—A complete set of Great War battle honour scrolls, ready for affixment, is to be issued to each Yeomanry Dragoon regiment, including those regiments now converted into other arms which were authorised to carry guidons prior to the reconstruction of the Territorial Army. These scrolls, together with any pre-war battle honour scrolls, will be emblazoned under regimental arrangements on the obverse and reverse sides of the guidon in the order of precedence laid down in the Monthly Army List. The order of precedence of battle honours is across the guidons and no deviation from this order

will be permitted. Any honours awarded prior to the Great War will be first removed from the obverse and reverse sides of the guidon, and the whole of the scrolls will then be felled on.

ARMY RIFLE ASSOCIATION CHALLENGE CUP.—The Army Rifle Association have presented a magnificent challenge cup to the Territorial Army Rifle Association for competition among Territorial units. The Executive Committee of the Territorial Army Rifle Association have decided that the cup shall be competed for by Company teams, the holder to be the team obtaining the best aggregate score in the High Sheriff's Shield, B.S.A. Guns, Ltd., and Lewis Gun competitions. It has also been decided that the cup should be awarded to the best company for 1924, although the competition does not appear in the programme book for this year.

The winner for 1924 was "A" Company, 8th Battalion, Argyll and Sutherland Highlanders, with a score of 1,055. The second best score was "B" Company, 8th Battalion, Argyll and Sutherland Highlanders, 1,050.

TERRITORIAL CADET FORCE: *The Lady West Memorial Shield.*—The Lady West Memorial Shield, an annual prize for the encouragement of physical training exercises and games amongst recognised cadet units, has been awarded to the Hutton Grammar School Corps, with a score of 471. The 6th Cadet Battalion, the Hampshire Regiment, took second place, with 451 points; and the Roborough School (Eastbourne) Corps the third place, with 436.

FORTHCOMING EVENTS.

ROYAL TOURNAMENT.—The Forty-second Annual Tournament will be held at Olympia, Kensington, W. 14, from Thursday, 28th May, to Saturday, 13th June, 1925, inclusive.

THE 1925 ALDERSHOT TATTOO.—A searchlight tattoo organised by the Aldershot Command will be held each evening from 15th June to 21st June. The first prize of £20 for the best suggestion for improving the tattoo has been won by Lieutenant C. F. Forestier-Walker, R.A., Aide-de-Camp to General Sir Philip Chetwode.

FOREIGN.

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CHILE.

NAVAL AND MILITARY CO-OPERATION AND SUPERIOR COUNCIL OF WAR.

Two Naval and Military Councils have recently been formed in Chile to study questions dealing with the national defence of the country, co-operation between the Army and the Navy, military and industrial mobilisation.

1. Council of National Defence.

The Council consists of—

President: The President of the Republic.

Members: The Minister of War, the Minister of Foreign Affairs, the Minister of Finance, the Inspector-General of the Army, the Director of the Navy, Directors-General of War and Naval Material, two specially nominated

general officers of the Army, two specially nominated officers of the Navy, the Sub-Secretaries of the Ministry of War and of Foreign Affairs, the Sub-Director of the General Staff who will act as Secretary to the Council.

In the absence of the President, the Council will be presided over by the Minister of War and Marine.

The duties of the Council are—

- (a) To form the general plan of the country's military and naval policy, using as a basis the Government's International Policy.
- (b) To form the scheme for the mobilisation of the country's industrial and economic resources in time of war.
- (c) To study the existing plan for the national defence of the country relative to the country's economic limitations.

The Council has the power to nominate specialists and officers of the General Staff to serve on Commissions appointed for the purpose of studying and reporting on such matters of a technical and military character as may be presented to them from time to time.

The Council will meet in the ordinary course four times a year.

2. *Naval and Military Mixed Commission.*

The Commission will consist of two officers of the General Staff and two officers of the Navy. These officers will serve with the Commission for a year without prejudice to their permanent appointment. They may be re-elected at the end of the year for a further period of one year.

Object of the Commission.

- (a) To co-ordinate the separate duties of the Army and Navy with respect to the national defence of the country.
- (b) To study all questions entailing military and naval co-operation that may be submitted to it by the Council of National Defence.

The following subjects will be studied in detail :—

- (i) Plans for the rapid mobilisation of the military and naval forces of the country.
- (ii) Co-operation of the fleet as regards the needs of the Army during mobilisation and when on service in the field.
- (iii) Co-operation of the fleet for the maintenance of the lines of communication.
- (iv) Co-operation of the fleet with reference to the concentration and transport of the armed forces of the country.
- (v) Co-operation in military and naval intelligence and in counter-espionage.
- (vi) Study in detail of all available data that concerns the industrial and economic resources of the country in their relation to national mobilisation.

To enable this Commission to carry out its functions to the best purpose, all available information in the possession of the Government and of private firms that are connected with the subjects above will be put at the disposal of the Commission. The Commission will meet quarterly in Santiago and Valparaiso alternately.

3. *Superior Council of War.*

The Council is to consist of—

President : The Inspector-General of the Army.

Members : The Chief of the General Staff, the Chief of the Military Administration, the Chief of the General Department of War, two officers of the General Staff nominated by the Government, who will serve on the Council for a period of one year, the Permanent Sub-Secretary to the War Ministry, who will also act as Secretary to the Council.

The Council will have no executive powers; its uses are to be purely consultative and advisory.

The Council will be employed by the Ministry of War to study and form opinions on such matters as may be laid before it by the Ministry of War, such as the general organisation of the Army, military education and instruction, acquisition of war material and the mobilisation of the Army.

The Council will meet once a month.

FRANCE.

PEACE ORGANISATION OF FRENCH INFANTRY.

The infantry can be classed under three subdivisions—

(1) Metropolitan Infantry.¹ (2) Tanks. (3) Colonial Infantry.

The whole is to comprise 43·40 per cent. of the total effectives on mobilisation; the Metropolitan and Colonial Infantry representing 40·80 per cent. and the Tank arm 2·60 per cent. In the army of October, 1918, the proportion was 44 per cent. infantry and 0·60 per cent. Tank *personnel*.

The following table shows the decrease in French infantry regiments and the increase in native and colonial regiments since 1914 :—

	1914.	1924.
French Infantry Regiments ...	173	64
French Chasseur Battalions ...	31	30
Regiments of Zouaves ...	4	6
Regiments of " Tirailleurs Nord Africains " ...	12	30
Regiments of the Foreign Legion ...	2	4
Colonial Infantry Regiments (White) ...	16	10
Regiments of Colonial Tirailleurs (Native)...	20	30

The most notable feature of the new organisation is the remarkable increase in the number of regiments of " Tirailleurs Nord Africains " from 12 to 30, 16 of which are in the Mediterranean Basin and 14 in the interior of France and

¹ The general distribution of the French Army falls under four headings—

(i) Metropolitan Army.

(ii) Army of Occupation of the Rhine (A.F.R.).

(iii) Mediterranean Basin (North Africa and the Levant).

(iv) Colonies outside the Mediterranean Basin.

the A.F.R. To form these regiments a contingent of 60,000 North African natives is necessary, and to-day the greater part of these are conscripted, whereas, in 1924, the larger part was found by voluntary engagements and a minority by conscription. It is probable that the North African conscript of to-day is inferior in quality to the volunteer of pre-war date; further the demand for volunteers is to-day difficult to meet, as service in France or the occupied territory does not offer the same advantages and attractions to the native as home service in Algiers and Tunis.

(1) *Metropolitan Infantry.*

If the Metropolitan Infantry is considered alone, out of a peace time French contingent of 460,000 men, the total effectives allotted to the infantry arm amount to 236,300 or about 50 per cent. of the whole. It has been calculated that, allowing for non-effectives and men who do not appear on mobilisation, this gives the necessary margin of safety to produce the 43·40 per cent. on mobilisation.

The total of 236,300 is made up as follows :—

Frenchmen	176,300
North African Natives	60,000

The various units comprising the Metropolitan Infantry are as follows :—

- (a) Infantry Regiments (Normal type and "Type renforcé")
- (b) Regiments of "Tirailleurs Nord Africains."
- (c) Regiments of Zouaves.
- (d) Half Brigades of Chasseurs-à-pied.
- (e) Machine-gun battalions.
- (f) "Groupes de Chasseurs Cyclistes."
- (g) Regiments of the Foreign Legion.
- (h) Battalions of African Light Infantry.
- (i) "Sections de discipline."
- (j) Compagnies Sahariennes.

(a) The peace organisation of an Infantry Regiment is—

Headquarters. Headquarter company ("Compagnie hors rang").

Three battalions, each of three companies and one machine gun company.

The Headquarter company is organised in four sections, including all employed men. The band makes up No. 2 Section.

The Regiment "type normal" differs from the Regiment "type renforcé" in that it is considerably weaker, being composed of 41 officers and 1,600 other ranks, against 53 officers and 2,200 other ranks. Its organisation also differs in that it only has two "sections de combat"¹ per company, whereas, there are three in the "type renforcé." The number of senior officers is in each case the same, but in a Regiment "type renforcé" there are 27 subalterns as against 15 in a normal regiment.

(b) In a regiment of North African Tirailleurs there are 500 Frenchmen and 2,000 natives, with 50 French and 9 native officers (lieutenants and 2nd lieutenants).

(c) A half brigade of Chasseurs-à-pied consists of 3 battalions and has a total strength of 56 officers and 2,200 other ranks.

¹ A "section de combat" corresponds approximately to platoon and must not be confused with a "groupe de combat" which is the kernel of the fighting organisation and consists of one "fusil mitrailleur" squad and one rifle and bomber squad.

- (d) The strength of a Zouave regiment is 15 officers and 1,800 other ranks.
- (e) The strength of a regiment of the Foreign Legion is 69 officers and 3,134 other ranks, but the number of battalions is variable.
- (f) The strength of a machine gun battalion is 15 officers and 500 other ranks.
- (g) The "Groupes de Chasseurs Cyclistes" will eventually be transformed into some kind of mechanical unit capable of working with cavalry; their organisation is in consequence transitory.
- (h) The strength of a "Battalion d'infanterie légère d'Afrique" is 20 officers and 1,000 other ranks.

The infantry armament is the same in 1924 as in 1918 except that the "fusil mitrailleur" is in process of replacement by the Chatellerault light machine gun, which weighs 8 kilos. 650 grs. (about 19 lbs.) and has a normal rate of fire of 450 rounds a minute.

Other improvements in view are :—

- (i) A new "canon d'accompagnement," (Little definite progress has however been made in the solution of this problem.)
- (ii) An anti-aircraft machine gun and an anti-tank machine gun, calibre about 13 mm. ($\frac{1}{2}$ inch).
- (iii) A new automatic pistol.
- (iv) A rifle grenade to replace the Viven Bessières, which has an inadequate range and injures the rifle.

(2) Tanks.

Under the new organisation tanks will still be attached to the infantry and will not form an autonomous arm.

Their armament will form a branch of study under the "Service de l'infanterie." This is a new creation on the same lines as the "Service de l'artillerie," and will form a new bureau under the "1st Directorate" at the War Office. It will be responsible for :—

- (1) Arms of small calibre and their munitions.
- (2) "Engins d'accompagnement" (i.e., 37-mm. guns, Stokes mortars &c.) and their munitions.
- (3) Grenades, bombs, &c.
- (4) Tank matériel.

Light tanks.—22 Regiments and 1 independent battalion are formed in peace time. The mobilisation of these units will be rapid; the battalions which have 3 companies in peace time form a 4th company (compagnie d'échelon) on mobilisation; their war matériel is complete and the stock of Renault tanks is sufficient for the 22 regiments and the independent battalion.

Heavy tanks.—The "char de rupture 2 c." or a similar type will gradually replace the Mark V*. All are grouped at Châlons in the 551st Regiment, where the "Centre d'études" is located and where facilities exist for trying out and perfecting heavy tanks. The "char 2 c." consumes 120 litres (26.4 gallons) of petrol per hour.

(3) Colonial Infantry.

The status of the Colonial infantry was fixed by decree dated 7th July, 1900, the articles of which lay down that :—

- (1) The Colonial troops are to be autonomous and placed under the command of officers of the Colonial army.

- (2) They are to be under the Ministry of War.
- (3) The Ministry of the Colonies is responsible for the defence of the Colonies.
- (4) The number of regiments and units is fixed by decree.

It was necessary to allow of elasticity in the number of regiments, &c., to be formed, as this involved not only questions of policy in the defence of the Colonies overseas, but also the organisation of the Colonial troops stationed in France, as the latter constituted the "reservoir" of the Colonial relief.

The quality and utility of the native troops employed in the Great War brought out the value that could be drawn from native contingents in war time, whilst the problem of the defence of the various French Colonies has at the same time simplified itself.

The organisation, to-day, in fact envisages the possible employment of a mass of Colonial troops on mobilisation in the Métropole, and is the reverse of that conceived in 1900.

The Colonies now form the "reservoir" of *personnel* which may be ultimately required in the Métropole. The Recruiting Law of 1st April, 1913, has drawn up a programme now in process of realisation, by which the effectives of native Colonial infantry already reach 80,000 (of which 46,000 are in France and the Mediterranean Basin). These effectives are *encadré* by a proportion of white European volunteers of the Colonial infantry.

Organisation.—The organisation of the Colonial infantry and its distribution between white and native troops falls under four distinct headings:—

- (a) Native Colonial troops available for employment in France, occupied territory or Mediterranean Basin.
- (b) European troops necessary for the *encadrement* of the natives mentioned in (a).
- (c) European and native troops necessary for defence of the various Colonies, and also to assure the formation of trained reserves.
- (d) European effectives destined to provide the regular relief of white *personnel* employed in the Colonies.

To meet these various requirements the following organisation and distribution has been decided upon:—

- (i) *France, A.F.R. and Mediterranean Basin.*—7 Regiments of White Colonial Infantry. 15 Regiments of Colonial Tirailleurs. 9 Battalions of Chasseurs mitrailleurs (native Colonial).

Of which 7 Regiments of White Colonial Infantry, 7 Regiments of Colonial Tirailleurs, 9 Battalions of Chasseurs mitrailleurs, are stationed in France or A.F.R.

The Colonial troops stationed in France and the A.F.R. enter into and form part of the organisation of the 32 line divisions.

The white regiments are constituted as in the Metropolitan infantry, those in the Métropole being of the "type normal," *i.e.*, strength 1,600 men, and those in the A.F.R. "type renforcé," *i.e.*, strength 2,200 men.

The native regiments, on account of their long distance from their colony of origin, have a higher peace strength of 2,500 men, of which 500 form white *encadrement*, and the battalions of Chasseurs mitrailleurs, for similar reasons, have a peace strength of 750 men, of which 520 are natives.

(ii) *Outside the Mediterranean Basin, i.e., in the Colonies themselves.*— 2 Regiments of Colonial Infantry. 2 Independent Battalions of Colonial Infantry. 15 Regiments of Colonial Tirailleurs. 8 "Battalions of Transition." 1 Independent Company of Colonial Infantry.

The native regiments stationed in the Colonies have, obviously, not the same necessity for rapid mobilisation as the regiments in the Métropole, and, therefore, have a smaller *encadrement* of white *personnel*.

The "battalions of transition" mentioned above are solely concerned with the incorporation and despatch of troops from the Colonies to the Métropole and Mediterranean Basin, and are purely administrative units.

The total of officers in the Colonial infantry is as follows:—

French officers	2,956
Native officers	116

This gives a considerable margin in what is known as the "majoration de relève," to allow for a proportion of non-effective officers caused by sickness or convalescence after a period in the Colonies, time spent on board ship, &c. In addition, each officer between two tours of duty in the Colonies has to spend at least 2 years in the Métropole.

The employment of white *personnel*, other than officers, in the Colonial infantry falls under the following headings:—

(a) In the Colonies, to form white units (N.C.Os. and other ranks) and to provide the necessary "encadrement" (N.C.Os.) to native units.

(b) In the Mediterranean Basin, where there are only mixed units (regiments of Colonial Tirailleurs), to provide the necessary "encadrement" of N.C.Os., four-fifths of the other ranks being formed from native conscripts.

(c) In France, they are utilised in all units (Colonial infantry regiments or mixed Colonial regiments) concurrently with conscripts of the French contingents.

From the above it follows that, as regards white troops in the Colonial infantry, the "soldats de carrière," or voluntary engagement class, must consist largely of N.C.Os.

The figures under the Loi des Cadres of voluntary engagement men employed in the Colonies, Métropole, A.F.R. and Mediterranean Basin are:—

N.C.Os.	12,133
Other ranks	6,774
Total	18,907

To sum up, outside the Mediterranean Basin the security of the French Colonies is assured by the utilisation of native contingents, strengthened by a minimum of white units.

In France and the Mediterranean Basin, native troops with a strong *encadrement* of the European element form part of the same organisation as the Metropolitan army.

The *encadrement* and reserve of instructors (officers and N.C.Os.) is assured by the white troops of the Colonial army in the Métropole.

SOVIET UNION.

TERMS OF SERVICE.

According to a Decree of the Central Committee and Council of the People's Commissaries, dated 21st March, 1924, the periods of service in the fighting forces of the Soviet Union have been fixed as follows:—

(a) For the Naval Fleet and also for the Naval sections of the forces of the State Political Department (O.G.P.U.), 4 years.

(b) For specialists of the Air Fleet, 3 years.

(c) For all branches of the Army, with a few unimportant exceptions, 2 years.

Previously, the terms of service in the Army were 1½ years for the infantry and rather longer for other arms and services. The main reason for the present change appears to be the necessity for calling all recruits to the colours at the same season of the year (*i.e.*, the autumn), (a) to avoid disturbing agricultural work in the spring and (b) to maintain the Army at a more constant strength. With an 18 month term of service it was found necessary to have either two mobilisations a year (spring and autumn) or to have only one mobilisation, but to admit in the summer an over-quota and in the winter a corresponding under-quota of recruits. Moreover, it is stated that discrepancy in lengths of service made enrolment in those arms in which the period of service was longer very unpopular.

All citizens who have reached the age of 21 by the 1st July of the year of mobilisation are liable to be called up.

TURKEY.

TEXT OF THE MILITARY SERVICE LAW RECENTLY ACCEPTED BY THE GRAND NATIONAL ASSEMBLY.

The Articles of the Law modifying the 5th and 118th Articles of the Military Service are as follows:—

Article 1.—The period of active military service is 1½ years for infantry and transport; 2 years for artillery, cavalry, air, professional, motor-car, scientific and music groups; 2½ years for gendarmerie, and 4 years for the navy. Each period of service commences from the date of entry.

(a) Those fulfilling the conditions for short military service pass 9 months of their active military service under arms as before, and the remaining period on leave.

(b) Those who pay £T500 during peace time pass the four months of their active service under arms. Except infantry, those belonging to various military and naval groups who have not completed one year's training with their units and who pay the Military Exemption Tax, are compelled to train for a further period of three months with the infantry. The 73rd, 74th, 75th Articles of the Military Service Law, as well as the Military Exemption Law of 21st July, 1921, are abolished.

(c) Recruits who possess pilot's certificates and have had them previously approved by the Air Force Inspectorate are demobilised, provided they obtain pilots' certificates after five months' active military aviation service. If they cannot do so after five months, they must complete their remaining period of active service with the Air Force.

Those in paragraph (c) who have obtained military pilot's certificates, thereby fulfilling the conditions for short service which entitle them to demobilisation,

may be transferred to the Air Reserve on completion of four months' service after their efficiency has been established, thus completing their nine months' service as stated in paragraph (a).

Article 2.—In the case of artillery, cavalry, band, gendarmerie, professional, motor-car, air and naval groups, whose period of service, as stated in Article 1, exceeds $1\frac{1}{2}$ years, their period in reserve will be reduced by twice the amount of the above extra service over $1\frac{1}{2}$ years.

Article 3.—Men who have not completed their preliminary school course are taught during their active military service in accordance with a definite programme.

Article 4.—Ten per cent. of the military exemption tax levied in peace time will be retained by the local centres.

Article 5.—This law enters into force as from the date of its publication.

Article 6.—The Ministries of Interior, Finance and War are charged with the execution of the provisions of this law.

Note.—The term "professional" used in Article 1 does not mean only medical professionals, but includes tradesmen and experts of all sorts.

ROYAL AIR FORCE NOTES.

AIR MINISTRY.

Consequent on the change of Government the Right Hon. Sir Samuel J. G. Hoare, Bart., C.M.G., M.P., is again Secretary of State for Air and President of the Air Council. Major Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P., has been appointed Under-Secretary of State for Air and Vice-President of the Air Council.

PROMOTIONS AND APPOINTMENTS.

The following promotions were announced on the 1st January, 1925:—

To be Air Vice-Marshals	...	C. L. Lambe, C.B., C.M.G., D.S.O.
		J. M. Steel, C.B., C.M.G., C.B.E.
To be Air Commodores	...	C. L. N. Newall, C.M.G., C.B.E., A.M., A.D.C.
		R. Gordon, C.B., C.M.G., D.S.O.
To be Group Captains	...	C. L. Courtney, C.B.E., D.S.O.
		S. A. Hebden, O.B.E.
		L. W. B. Rees, V.C., O.B.E., M.C., A.F.C.

On 1st January, 1925, Air Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O., took up his appointment as Air Officer Commanding-in-Chief, Air Defence of Great Britain.

ORGANISATION, ADMINISTRATION AND TRAINING.

ROYAL AIR FORCE STAFF COLLEGE.—Twenty-five officers were successful in passing the R.A.F. Staff College entrance examination, which took place last September. Twenty R.A.F. officers have been selected to attend the fourth course, which is due to commence on 5th May, 1925; officers from the Navy, Army and

Dominions have also been nominated to attend this course. The third term of the present course commences on 26th January and ends on 27th March, 1925.

During the month of November the students participated in a war game, which lasted one week, at the Royal Naval Staff College, Greenwich; they will later take part in a combined exercise which will be held at the Staff College, Camberley.

STAFF EXERCISES AND COURSES.—At the request of the War Office fourteen R.A.F. officers took part in a scheme which was carried out at the Staff College, Camberley, during the first week of December.

RECRUITING.—An acceleration of the Home Defence programme has caused an increase of vacancies in certain trades. The chief requirements are skilled W/T operators and carpenters.

WIVES AND FAMILIES OF R.A.F. IN IRAQ.—The Air Council has re-affirmed the principle of the non-admittance of the wives and families of officers and airmen into Iraq.

AIR FORCE AND AUXILIARY AIR FORCE RESERVE ACT.—Consequent upon the passing of the Auxiliary Air Force and Air Force Reserve Act, 1924, a liability to be called up for service in the British Islands against actual or apprehended attack, whether or not the Army or Air Force Reserve has been called out by Royal Proclamation, has been added to the liabilities previously imposed on officers and men of the Air Force Reserve. When the Auxiliary Air Force and Special Reserve are constituted this liability will apply to the *personnel* of these forces.

HOME DEFENCE FORCE.—The transfer of units of the Home Defence Force from the command of A.O.C., Inland Area, to that of A.O.C.-in-C., Air Defence of Great Britain, will be effected gradually in accordance with a programme to be decided later. This transfer will not commence before the autumn of June, 1925. The Headquarters of the A.O.C.-in-C., Air Defence of Great Britain, will be temporarily located in the Air Ministry until further notice.

NAVAL CO-OPERATION.

(See also "Fleet Air Arm"—*Naval Notes*.)

HOME STATIONS.—Exercises were carried out between 4th and 7th November by all units of No. 10 Group, Lee-on-Solent, with submarines and surface craft, during the course of which two dummy attacks by a combined force of torpedo-craft and bombers were delivered.

One torpedo attack was carried out from Gosport on 12th September on H.M. ships.

MEDITERRANEAN.—No. 481 Flight, Malta, has carried out the usual co-operation with the Navy and Army.

ARMY CO-OPERATION.

GENERAL PROGRESS.—Considerable advance has been made in the amount of co-operation that it has been possible to carry out with the Army this year.

Four Army Co-operation Squadrons are now in being and have been working with the different Army Commands: No. 2 with the Eastern and Northern Commands, Nos. 4 and 13 with the Aldershot Command, and No. 16 with the Southern Command.

No. 13 Squadron, which has hitherto consisted of Headquarters and two flights only, has now been made up to a complete squadron, and will in future be at the disposal of the G.O.C.-in-C., Aldershot Command, at all times.

CO-OPERATION WITH ARMY ON THE RHINE.—One flight of No. 13 Squadron went to the Rhine for a month to take part in Brigade and Divisional training.

CO-OPERATION WITH TERRITORIAL ARMY.—In all commands as much co-operation as possible has been arranged with units and formations of the Territorial Army, and units of the Officers' Training Corps. This co-operation is necessarily limited, as the demands of the Regular Army have precedence.

DIVISIONAL AND BRIGADE EXERCISES.—Owing to the outbreak of foot-and-mouth disease in the New Forest, the Army manoeuvres in that area, which involved inter-Divisional operations, had to be cancelled. Manoeuvres have, therefore, had to be confined to Brigade and Divisional exercises within commands themselves. Aircraft from the Army Co-operation Squadrons have taken part in all these exercises.

In the Aldershot Command a great deal of experimental work has been carried out with the Tender, which is now working very satisfactorily and has proved of great assistance in all operations.

Day Bombers, Night Bombers and Single-Seater Fighters co-operated with the 1st Division, and Day Bombers and Single-Seater Fighters with the 2nd Division. Single-Seater Fighters were employed on low-flying attacks against suitable ground targets, such as reserve formations or transport, the position of these being reported by the close reconnaissance aeroplane.

OVERSEAS COMMANDS.

IRAQ.

During September, October and November the attention of the Royal Air Force in Iraq has been mainly directed towards the Turkish menace on the Northern frontier and to the activities of Shaikh Mahmoud in the district around Sulaimaniyah.

Despite the warning which was delivered to the Turks on the 12th September (see R.A.F. Notes in last JOURNAL), Turkish regular troops crossed the *status quo* frontier and commenced to burn Assyrian villages situated in Iraq territory. They also came into contact with Iraq Police posts, but did not attempt to advance south of these.

No. 6 (Army Co-operation) Squadron was moved from Mosul to Zakho and No. 55 (Bombing) Squadron was moved up to Mosul from Baghdad. Air reconnaissances were carried out every day and an unremitting offensive was sustained by aircraft against all bodies of Turkish troops seen within Iraq territory. Our casualties during these operations were two officers and one other ranks wounded.

On 11th October the Air Officer Commanding sent a staff officer with a flag of truce to visit the Turkish Commander and to endeavour to arrive at a satisfactory settlement. The Turkish Commander was unable to agree to an evacuation of the area bounded by the line laid down by His Majesty's Government.

In the meantime the matter had been referred to the League of Nations, and the Air Officer Commanding was told to withhold further offensive action.

Towards the end of October the Council of the League of Nations, under the presidency of Monsieur Branting, met at Brussels, and the Turkish and British Governments agreed to accept the Council's decision of what the line should be pending the final settlement of the Northern frontier.

By the 15th November all Turkish forces had been withdrawn to north of the line laid down by the Council at Brussels.

A Select Commission of three from the League of Nations is now investigating the problem with a view to the final settlement of the Northern boundary of Iraq. Both Turkey and Great Britain have agreed to accept the League's decision. The Commission is visiting Angora first and then going on to Mosul, where they expect to arrive early in January, 1925.

SULAIMANIYAH.—There has been a considerable amount of activity in the district around Sulaimaniyah during the period under review. The area is still under Government administration and the town is occupied by Government troops; but Shaikh Mahmoud, with a small following, continues in his attitude of defiance, and by his intimidating tactics is constantly causing trouble in the surrounding country. Vigorous action has accordingly been taken against him at every opportunity with a view to making him submit or, alternatively, to make him leave the country in peace. So far the Government has not succeeded in its aim; but Mahmoud's prestige steadily decreases and the situation is now approaching the normal.

Towards the end of October it appeared likely that a Pizhder lashkar of some 100 men was about to join Mahmoud. Pamphlets were dropped on the tribe warning them of the consequences of such a move, and this was sufficient to turn them from their purpose.

Under Government administration conditions in the town of Sulaimaniyah are rapidly approaching the normal. Business is on the increase, the reparation of damaged buildings proceeds apace, and the population is now about 20,000.

HAMMAR LAKE.—During November Salim al Khaiyun, an influential shaikh of the Hammar Lake area, who had been giving considerable trouble for some time, culminating in armed aggression against the Government representatives, refused to comply with orders and to give a guarantee for future behaviour. In order to prevent a spread of disaffection, it was decided that air action should be taken against him. His tribe were first warned by means of pamphlets dropped from aeroplanes, and then on the 30th November and the first two days of December his house and guest house in Chubaish were bombed. Bombing was very accurate, and his house was partly destroyed and his guest house completely burnt. One man, Salim's brother-in-law, was wounded. As a result of this action, all the tribal leaders in the area surrendered and signed a manifesto denouncing Salim and declaring their allegiance to the Government. Salim himself was a fugitive for a short time, but he eventually surrendered and was sent to Baghdad. Iraq army posts were established at Chubaish and Hammar, and the latest reports say that everything is now quiet and that the villagers are now returning to their homes.

AHKWAN RAID.—On the 26th December some Shepherd tribes in the Shamiyah desert were raided by some Ahkwan. Flying was impossible until the 28th owing to bad weather conditions, but on that date reconnaissances were made from Shaibah and the raiders were located retreating. Air action was taken and casualties inflicted. Full details are not yet available.

INDIA.

During recent months the situation on the N.W. Frontier has remained normal. Certain tribes have committed offences, but demonstration flights have been sufficient to curb their unruliness.

OPERATIONS.—In September the Tabai Galeshai and Jalal Khel sections adopted a very threatening attitude as a result of the conviction and hanging of certain members of their tribes for the murder of British subjects. Demon-

stration flights were carried out over their country. Subsequently the sections concerned attended a jirgah and agreed to all the conditions imposed. The Political authorities reported that the results were chiefly due to the Royal Air Force demonstrations.

On the 10th October seven aeroplanes carried out a demonstration over Shahzan in the Spli Toi on account of the kidnapping of a Peshawari by the Abdur Rahman Khel. The demonstration was successful and the kidnapped man was brought in a few days later.

No. 2 Wing carried out a mobilisation exercise at Arawali at the end of November, and advantage was taken of their presence to co-operate in a big demonstration flight over Waziristan on 1st December. This demonstration was intended to act as a reminder to the Faridai and the Jalal Khel of the weight of British air power and to impress a Mahsud jirgah which was being held at Tank.

During the period Nos. 27 and 60 Squadrons have been co-operating with the Chitral reliefs.

SALE OF AIRCRAFT TO AFGHANISTAN.—On 22nd August two Bristol Fighters were flown from Peshawar to Kabul and handed over to the Afghan Government on repayment.

CROSS-COUNTRY AND LIAISON FLIGHTS.—During August two machines of No. 20 Squadron undertook an extensive flight in Makran.

In October two machines of 20 Squadron carried out a long flight following the line of the Nushki Extension Railway to Koh-i-Taftan.

On the 7th September four machines of No. 27 Squadron carried out a cross-country flight from Risalpur to Arawali. Whilst there two machines took up nine local Malikis for flights, which were much appreciated, and a demonstration of bombing was also given. The machines returned to Risalpur on the 10th.

On the 7th October, No. 31 Squadron carried out a reconnaissance of some flooded areas in the Sonipat district at the request of the Chief Commissioner, Delhi, in order to locate stranded inhabitants on islands, etc.

All squadrons have carried out training during the period under review, and in addition a considerable amount of work has been done in co-operation with the Army.

EGYPT.

During September a party from No. 47 (Bombing) Squadron inspected the stores and re-fuelled the landing grounds on the Cairo-Khartoum route.

During September and October, lectures and demonstrations were given to Army personnel stationed at Ismailia and Abbassia. No. 216 (Bombing) Squadron carried out a considerable amount of practice co-operation with Army units.

On 19th November, the Sirdar of the Egyptian Army and Governor of the Sudan, Sir Lee Stack, was assassinated in Cairo. In connection with the subsequent action of the British Government, aircraft played a prominent part in the measures taken to guard against disturbances. Air demonstrations were made over the principal towns in Egypt with good results.

On the 26th November two aeroplanes left Cairo for Khartoum with an Egyptian officer carrying urgent despatches. The aircraft reached Khartoum at 09.40 hours on the 28th November, having refuelled at Aswan, Wadi Halfa and Atbara.

The flight is still at Khartoum and will probably remain there pending the final settlement with Egypt.

SECRETARY OF STATE FOR AIR VISITS MIDDLE EAST.—The Secretary of State for Air, Lord Thomson, accompanied by his secretary and a staff officer, left London on 17th September on a visit to Iraq, and returned on 9th October.

Whilst in the Middle East he visited all the important places by air. He was given a splendid reception by the inhabitants when he visited Sulaimaniyah. Deputations waited on him to thank him for the measures taken to free them from Shaikh Mahmoud's oppressive rule.

CAIRO-BAGHDAD SERVICE AIR MAIL.—The Cairo-Baghdad Service Air Mail has continued to operate regularly during the period under review. Air mail duties have been carried out as follows:—

August ...	Aircraft: 12 Vickers Vernons. Passengers: 16 R.A.F., 2 Army. Mail: 844 lbs.
September ...	Aircraft: 8 Vernons, 4 Vimys. Passengers: 15 R.A.F., 4 Army, 1 civilian. Mail: 734 lbs.

PALESTINE AND TRANSJORDAN.

During the last three months the situation has been normal, and all R.A.F. units have been carrying out their normal training. Co-operation between ground and air was constantly practised.

TRANSJORDAN.—On the 14th September armoured cars proceeded to Yaduda and co-operated with the Arab Legion in arresting Syrian outlaws.

The flight of aircraft at Amman is now a detachment of 14 (A.C.) Squadron, Ramleh. Previously it was an independent flight.

PALESTINE.—When the crisis occurred in Egypt towards the end of November, reinforcements were required and the 9th Lancers were moved from Palestine to Cairo.

On the 1st November the garrison was reduced by one flight of No. 14 (Army Co-operation) Squadron and one section of armoured cars. No. 14 Squadron still has three flights, however, as the Amman flight is now regarded as a detachment from Ramleh temporarily equipped with D.H. 9 As.

ADEN AND SOMALILAND.

During the period under review the flight at Aden, with its detachment in Somaliland, has carried out reconnaissance flights and normal training.

CIVIL AVIATION.

AIR VICE-MARSHAL BRANCKER'S TOUR.

The air tour to India carried out by Air Vice-Marshal Sir W. Sefton Brancker, Director of Civil Aviation, was undertaken with the object of surveying the ground for possible extensions of the British airway system.

Experience in all countries up to date points clearly to the fact that aircraft are not fulfilling their most useful and economical function whilst they are in competition with highly-organised railway and steamship services over comparatively short routes, and, therefore, that they must be extended further afield or be set to work in places where surface methods of transport are inadequate.

It is too early yet to say which route or routes offer the most favourable conditions, both commercially and technically. If there is one route more than another upon which the speed and range of aeroplanes is likely to show really valuable results, it is that from Port Said to Karachi, already operated in part by the Royal Air Force. It is estimated that if mails were carried by air over this route, six days would be saved on communication between Great Britain and India and all places beyond India.

AVIATION IN FOREIGN COUNTRIES.

FRANCE.

NAVAL AVIATION.—Administration.—Capitaine de Vaisseau J. J. N. de Laborde has been appointed Director of Naval Aviation in the Ministry of Marine vice Rear-Admiral Gilly.

The new Director's first action on appointment was to re-organise his department. In the past this Directorate consisted of the following departments—1st Bureau (*personnel*), 2nd Bureau (Material and Research), 3rd Bureau (Administration).

The Director was responsible to the Chief of the Naval Staff for all questions, and each of the above-mentioned bureaux worked in conjunction with a number of other departments of the Ministry of Marine.

This system was found generally unsatisfactory. Consequently, in November, 1924, a decree was published abolishing the old organisation and providing for two Divisions :—

(a) *1st Division (Technical and Administrative).*—This Division consists of (i) A Technical Bureau; (ii) An Administrative Bureau; (iii) A *Personnel* Bureau, and is responsible for all technical and administrative questions concerning aircraft or ground installations belonging to the Naval Air Service.

The *Personnel* Bureau is responsible for the compilation and application of regulations affecting *personnel* of the Naval Air Service, for appointments and postings, and for the application of the training policy laid down by the 2nd Division.

The Director of Naval Aviation is directly under the Minister of Marine for all matters concerning this Division.

(b) *2nd Division (General Staff).*—This consists of : (i) An organisation bureau; (ii) an operations bureau; and is responsible for plans, policy of training, mobilisation, policy *re* equipment, organisation and establishments.

This Division is regarded as a portion of the General Naval Staff attached to the Director of Naval Aviation.

The Director of Naval Aviation is directly under the Chief of the Naval Staff for all questions concerning this Division.

Move of Naval Air Unit.—The Naval Air Unit, which has, up to now, been situated at Brest, has been moved to Lorient, which has hitherto been an inactive station consisting of a care and maintenance party only.

The evacuated station at Brest will not be disbanded, but will be manned with a care and maintenance party and maintained as a reserve station.

MILITARY AVIATION.—Estimates.—The estimates for the Air Arm of the French Army have been discussed and passed by the Chamber of Deputies, but have not yet been considered by the Senate.

Considerable increases over the sums voted for last year are provided for. The report of the Finance Commission of the Chamber of Deputies on these estimates states that the increases are not asked for in order to form new squadrons, but in order that existing units may be re-equipped with modern machines and that the whole of the service may be re-equipped throughout with more powerful and modern types of engines.

A large proportion of the increases are attributed to the fact that the cost of purchase, maintenance and repair of equipment of all sorts has risen very considerably.

Night Flying.—The Minister of War has decided to purchase considerable quantities of aerodrome lighting equipment in order that all types of units may undertake the training of *personnel* in night flying, which has only been afforded to night bombing units in the past.

Flying Pay of Observers and Gunners.—A proposal to increase the flying pay of observers and gunners to be commensurate with that of pilots was recently referred to the Finance Commission of the Chamber of Deputies by the Minister of War. The object of this proposal was to increase the recruiting for these grades, which has not been satisfactory during the past two years.

The proposal was, however, vetoed by the Commission on the grounds that the risks run by observers and gunners were not as great as those run by pilots, that their standard of professional knowledge was not so high, that their qualifications for entry into the Air Arm were not so high, that the standard of physical fitness required of observers and gunners was not so high as that for pilots and that the number of flying hours which they executed was not so great.

ITALY.

THE ITALIAN AIR MINISTRY.—Further changes have been made in the administration and organisation of the Regia Aeronautica (Italian Royal Air Force) during the past quarter.

The Directorate of Civil Aviation was abolished in October. This Department, which was created simultaneously with the Regia Aeronautica in March, 1923, comprised, until its recent abolition, the various sub-departments on which the Regia Aeronautica depended for its administrative and technical *personnel* and for the supply of its aircraft and aircraft *matériel*. With its suppression, re-organisation of the administration of the Regia Aeronautica has taken place as follows:—

The Commissariat for Aeronautics (Italian Air Ministry) continues to control all aviation, both civil and military, in the capacity of a separate and independent Ministry. This control is exercised over:—

(A) *The Regia Aeronautica*, through

- (1) The Comando Generale—the General Staff or executive organisation controlling the combatant side of the Air Force and dealing with operations, training, recruiting and mobilisation.
- (2) The Directorate of Engineering and Aeroplane Construction—dealing with supply and research.
- (3) The Directorate of Administration and *Personnel* dealing with rationing, clothing, barracking, sanitation and accounting.

These three departments—executive, technical and administrative—are each commanded by an officer of general rank, responsible directly to the Commissariat.

(B) *Civil Aviation*—through the Air Traffic Office.

This office previously existed under the Directorate of Civil Aviation and is all that now remains of the latter. Civil aviation is not yet active, and so this office is of minor importance.

AIR VOTES.—At the end of last November the Air Vote for the current year—June, 1924, to June, 1925—was passed in the Italian Chamber of Deputies at the figure of £3,990,000. The estimate was originally set at the end of 1923 at £6,000,000. The programme originally drawn up by the Commissariat at the beginning of 1924 was based on this figure. The vote for 1923-24 amounted to £2,000,000, and the increase therefore from £2,000,000 to £6,000,000 allowed considerable scope for expansion in the proposed programme. The recent reduction from the proposed £6,000,000 to the passing of the vote at £3,990,000 has fallen practically entirely on flying *matériel*. Even so, however, 74 per cent. of the total vote has been set aside for *matériel*, though civil aviation comes off rather poorly with only 2½ per cent.

SQUADRONS AND MACHINES.—The net result can best be shown by a comparison of (a) Italy's present flying resources, military and civil; (b) how she proposes to expand these resources by June, 1925, with the money at her disposal:—

- | | | | |
|---|---|---|--|
| (a) <i>Regia Aeronautica</i> | - | - | 71 squadrons. |
| | | | (Approximately 1,000 first-line aircraft). |
| <i>Civil Aviation</i> | - | - | Nil. |
| (b) <i>Regia Aeronautica</i> ¹ | - | - | 89 squadrons. |
| | | | (Approximately 1,300 first-line machines). |

(¹ The original vote of £6,000,000 allowed for a total of 115 squadrons by June, 1925).

Civil Aviation - - - The inauguration of a bi-weekly service from Brindisi to Constantinople, starting in May, 1925.

Concurrently with this numerical expansion it is proposed to re-equip the *Regia Aeronautica* with certain new types of machines.

Various firms have been engaged in the production of a new heavy night bomber in a competition instituted by the Commissariat. The result of the competition has not been published.

As regards engines, Italy is still awaiting the arrival of a post-war aero engine of home design.

THE SECOND MARCH ON ROME.—The Anniversary of the March on Rome was again celebrated on 31st October by the appearance of an aerial force over Rome. One hundred and eighty-four aeroplanes and seaplanes and four airships in all took part. The machines left the ground at 10.30 hours and remained in the air for approximately 1½ hours, flying round in independent formations. One forced landing, only, occurred. The machine in question was a Fiat B.R. 1, and the forced landing was due to engine failure. The machine was crashed, but the crew escaped uninjured.

It is interesting to note that most of the machines were brought to Rome by rail, with the exception, only, of the heavy bombers (Caproni C.A. 3). The reported object of this was to put to test the ability of the *Regia Aeronautica* to mobilise on a large scale by other methods than by air.

BELGIUM.

A number of Royal Decrees were published by the Belgian Government in October, 1924. All of these point to a revision and amelioration of the conditions of service in the Belgian Military Air Service.

They deal primarily with (1) The re-adjustment of the pay and allowances of flying *personnel*. (2) The re-adjustment of the conditions controlling the entry and attachment of candidates for admission to the Belgian Military Air Service. (3) The creation of a School of "Sous-Lieutenants de Réserve Aéronautique."

This School has been instituted with the object of building up a N.C.O. pilot and observer Reserve, its ranks being recruited entirely from the N.C.O. *personnel* of the Belgian Military Air Service. On completion of a nine months' course, successful candidates are promoted to the rank of Second Lieutenant, finish their term of military service, and then go on the Reserve.

CZECHO-SLOVAKIA.

For some time past there has been a marked stimulus in aviation matters in Czecho-Slovakia. The production of home-built aircraft has been fostered by Government orders and the many types of old and obsolescent war machines are gradually being replaced by standard types. The Air Service at present consists of three regiments (stationed respectively at Prague, Olmütz and Vyitia) with approximately 200 machines. A number of long distance and formation flights have been carried out during the latter part of 1924.

POLAND.

FORMATION OF TWO NEW AIR REGIMENTS.—In accordance with the programme of development of the Polish Air Service to increase the existing number of Regiments from three to five, the organisation of a fourth Regiment at Torun (Thorn) is being proceeded with. At present this only consists of an instructional *cadre*, but it will be further developed as French Potez machines, type XV A.2, are received from France.

The 5th Regiment at Lwow (Lemberg) is due to be organised early in 1925 and each of the three existing regiments (at Warsaw, Cracow and Posen) is to provide a nucleus wing (wing = two squadrons), equipped with Potez XV A.2, machines from France, for this regiment.

PERSIA.

MILITARY AVIATION.—The Persian Air Force has purchased aircraft in Russia, Germany, and France in the course of the last year. The following aircraft compose the strength of the Air Force:—

- Four Russian machines of D.H. 9 type.
- One Dual-control Russian machine.
- Two Breguets, type 14.
- One Breguet instructional machine.
- Four German Junkers machines.

A further four machines, bought in France early in 1924, were crashed while attempting to fly from Bushire to Tehran and have not yet been repaired.

CIVIL AVIATION.—The Persian Government is reported to have recently concluded an agreement with the German firm Junkers Luftverkehr for the opening of an air route between Baku and Tehran *via* Enzeli, with a possible extension from Tehran to Bushire.

AIRSHIP NOTES.

GREAT BRITAIN.

THE NEW AIRSHIPS.—Two large airships are on order under the scheme announced by the late Government. One of these will be built under the supervision of the Air Ministry at Cardington, Beds., and one by the Airship Guarantee Company (associated with Messrs. Vickers) at Howden, Yorkshire.

The shed at Cardington is being lengthened from 700 feet to 812 feet and the height increased from 135 feet to 156 feet. The width, which is not being altered, is 180 feet.

No details are available of the Cardington airship, but the following particulars of the Howden one have been published :—

Capacity 5,000,000 cubic feet.

Length 695 feet.

Diameter (max.) 132 feet.

Weight of the structure and fixed parts not to exceed 90 tons.

Range (normal) 2,500 miles.

Accommodation (commercial purposes)—

120 passengers; 40 crew and 10 tons of freight or mails.

There will be 30 two-berth cabins, a smoking room, lounge, kitchen, etc.

Engines: Ricardo, kerosene and hydrogen type. Seven units of 550 h.p.

Speed (estimate maximum): 70 m.p.h.

Gas: Hydrogen.

Delivery of the airship is due in September, 1927. The cost is to be £350,000 and the Company may repurchase after certain specified trials, etc., have been carried out for £150,000.

H.M. AIRSHIP "R. 33."—The existing British airship, R. 33, is being reconditioned at Cardington with a view to experiments to collect data regarding the maintenance and handling of airships, particularly under tropical conditions. It is intended that this airship shall operate from an intermediate station on the route to India which is about to be installed, probably in Egypt.

Note.—A photograph of R. 33 appears as the frontispiece to this number of the JOURNAL.

UNITED STATES.

NAVAL AIRSHIPS.

CRUISE OF THE "SHENANDOAH."—The U.S. Naval Airship "Shenandoah" (Z.R. 1) left Lakehurst, New Jersey, on the 7th October, 1924, on a test flight of approximately 9,000 miles to the Pacific and back.

The flight was completed successfully in 18½ days, the airship returning on 25th October at 10.55 p.m. Her motors were working 257 hours. The time during which she was attached to mooring masts was 187 hours, and the length of time spent on repairs was 120 hours.

The average speed during the flight was between 38 and 40 m.p.h.

The number of passengers carried was 40, consisting of 12 Officers, 27 men, and 1 Press representative.

The following is a summary of the Flight:—

Oct. 7-9.	Lakehurst—Fort Worth	...	Distance	1,450 miles.
Oct. 9-11.	Fort Worth—San Diego	...	"	1,300 "
Oct. 16-18.	San Diego—Camp Lewis	...	"	1,300 "
Oct. 19-21.	Camp Lewis—San Diego	...	"	1,300 "
Oct. 22-24.	San Diego—Fort Worth	...	"	1,300 "
Oct. 24-25.	Fort Worth—Lakehurst	...	"	1,450 "

Mooring masts exist at each of the above named places and all landings were made by means of the airship being attached to them.

A delay at San Diego during the outward journey was caused by damage to a girder in the rear gondola, while being moored in the dark. The damage was repaired while the ship was riding at the mast.

Heavy storms were encountered on both the outward and return journeys between San Diego and Camp Lewis.

On 23rd October, while crossing the Rockies (between San Diego and Fort Worth), 1,400 lbs. of gasoline, as well as all water ballast, had to be thrown overboard in order to keep an altitude of 7,000 feet, which is necessary in crossing the high mountain area. It was found impossible to get above 7,000 feet without losing helium, as the gas expanded with decreased air pressure.

Upon arriving at Fort Worth, Texas, on the homeward journey, 180,000 cubic feet of helium were put on board the ship, this operation being effected at the mooring mast.

Upon returning to Lakehurst, New Jersey, on 25th October, some difficulty was experienced in landing the ship, as the air near the ground was 15 degrees colder than higher up, and when the warmer gas in the ship was brought down into the cool area it became relatively more buoyant.

DETAILS OF Z.R. 3. ("Los Angeles").—The second airship to fly the Atlantic (the British R. 34 was the first and accomplished the double journey), Z.R. 3. was built at Friedrichshaven and turned over to the United States Navy Department as part of the Reparations scheme. Photographs of the ship show that the girth has been considerably increased in proportion to the length as compared with earlier types of Zeppelin.

The principal dimensions, etc., are:—

Capacity	...	...	...	2,500,000 cubic feet (approx.).
Length	...	...	...	656 feet.
Diameter (max.)	...	...	...	90'5 feet.
Range (Commercial)	...	...	About	3,000 miles, at full speed.
" (War)	...	...	"	2,000 miles, at full speed.

Accommodation (Commercial)—

20 passengers (with baggage) and 25 crew.

Accommodation (War)—

25 crew; 20 tons of bombs, etc.

Engines: Five. Maybach engines of at least 400 h.p. each. The fuel used is petrol.

Speed (max.): 77 m.p.h.

Gas: Hydrogen has been replaced by helium since the arrival of the ship in the United States.

TRAINING OF NAVAL OFFICERS FOR AIRSHIPS.—In order to provide commissioned *personnel* for airships, seven naval Lieutenants have been selected by the Navy Department to undergo a course at Lakehurst.

The course will last for about a year and will include free-ballooning, training in non-rigid airships as well as in rigid ones, theory, construction, etc. This will be the second class. Officers trained in the first one have now mostly been appointed to the "Shenandoah."

ARMY AIRSHIPS.

AEROPLANE MAKES CONTACT WITH AIRSHIP.—A feat of interest was performed on 15th December at Belleville, Illinois, when a light aeroplane with 60 h.p. engine hooked itself to an Army airship while in full flight, and then unhooked itself, and flew away. This was accomplished at an altitude of 1,500 feet.

REVIEWS OF BOOKS.

The Naval Side of British History. By GEOFFREY CALLENDER, M.A., F.S.A. Christophers, 7s. 6d. net.

The author of this useful little history has compressed into less than three hundred pages the main facts and broad outlines of British maritime fortunes and achievements for four hundred and forty years. It is written in a style which is live and arresting and occasionally borders on the dramatic in its phraseology. No serious attempt is made to deduce concrete lessons in strategy from historic incidents or to go deeply into the development of the tactics of sea fighting; these, it is evident from the preface, have rightly been regarded as better left to naval experts. But the reader's attention cannot fail to be arrested by the overwhelming influence of sea-power throughout the ages, by the part played by fleets in shaping the destinies of nations and governments, and the bearing on military enterprises and economic conditions of naval operations. The historian traces clearly the rise and fall of the fortunes of this country as the Navy was built up or allowed to fall into decay, the expansion of our trade and overseas dominions, and, withal, the ingratitude often meted out to those who deserved well of the nation, because the people did not understand.

We see, first, these Islands at the mercy of a succession of foreign invaders, the sea but "an open highroad" whereon they might ferry to Britain's shores. Gradually emerges a navy—for many centuries mainly built for commerce, but yet easily adaptable for fighting. Anon we are shown the rise of our fortunes due to the "sea sense" of Henry VII. and his successors of the House of Tudor, the temporary decay of the fleet under the earlier Stuarts and the revival of sea-power under the Commonwealth and William of Orange.

The eventful years of the Hanoverian Sovereigns are linked together for us by a series of miniature pen-portraits of sea battles and naval characters, interspersed with allusion to the political intrigues and mal-administration which were continually hampering some of our greatest Admirals.

The era of the sailing navy culminates with the battle of Trafalgar. Then we see a period of conflict between the new and the old, until the former inevitably wins and we are launched into the days of iron and steam.

Two final chapters have to serve for a bare outline of the naval side of the World War, but these give the impression that the author feels that a larger perspective is necessary before recent events can be presented in their true proportion.

The history, as a history, suffers from being so rigidly compressed, and here and there the earnest student will doubtless find matter for dispute, but the broad impression left is that of an exceptionally attractive record of achievements with which every Englishman should be acquainted and which should make him proud of his country and jealous for her future welfare.

The Life of Lord Wolseley. By MAJOR-GENERAL SIR F. MAURICE and SIR G. ARTHUR. William Heineman. 25s.

After the Duke of Wellington, there is little doubt that Lord Wolseley is—with undoubted justice—now coming to be regarded as the greatest British soldier of the nineteenth century. The failure of the expedition up the Nile which Wolseley commanded in 1884-85 does not detract from his military ability to an extent sufficient to dim his reputation. The causes of its abandonment could not be traced to him alone. Neither can the military failures of the first few months of the South African War be laid to his charge.

Typical of his age and of his environment, Lord Wolseley's career was largely influenced by his early soldiering. Before the age of thirty he had fought in Burma and in the Crimea; he was next to pass through the Indian Mutiny and then to take part in the China expedition. Such a varied experience was to give him an insight into the life of the soldier under active service conditions that converted him, from the first days of his active service, into a fervent reformer. The abyss of soulless routine and make-believe into which the British Army had sunk before the days of the Crimean War had profoundly stirred the mind of the young soldier. To this first period of his life may be attributed the eventual compilation of the classic "Soldier's Pocket Book" which did so much to render Wolseley the target of the military "diehards" of the Victorian age. The success of this book was such that it ran through five editions and survives to this day as "The Field Service Pocket-Book."

He next went to Canada, where a first-hand acquaintance with the American Civil War gave him new experience, while his long residence in the Dominion endowed him with a human outlook such as, in more recent days, was so marked a trait in Lord Plumer. With a mind so attuned it was not surprising that the Red River and Ashanti expeditions should have been planned in all details and commanded by Wolseley with so much success.

Meanwhile a close acquaintance with Cardwell at the climax of his career as reformer was also to lead Wolseley into a long struggle with the forces that still championed adherence to archaic military tradition and conservatism. It was this struggle that was to constitute the crowning and closing phase of his active life.

But before he was called upon to take over the highest military office in the State, there was to be a long and varied interlude. First in Natal, then in Cyprus, and again once more in South Africa, Wolseley spent some years in administrative

positions which, unfortunately, do not show him off to best advantage. His attitude with regard to Transvaal politics cannot be said to redound to his credit for sagacity or humanity. It is possible that anxiety for his own Army career made him anxious to be home again and able to withstand in person the attacks to which he was undoubtedly being exposed in his absence. It may be assumed that his heart was not in the task before him, while the expression of his feelings concerning his place in the Zululand campaign of 1879 could only arise from chagrin at having failed to command at the Battle of Ulundi.

The skill with which the expedition to Egypt was prepared and carried out by him is manifest, yet there is reason to believe that the campaign was also regarded as a favourable opportunity for harvesting much easy military renown. The surrender of Cairo citadel and garrison to a single squadron of Dragoons led by a captain of Royal Engineers was not a topic which is emphasised in Wolseley's own despatches, nor in the present volume. The failure of Wolseley's efforts to relieve Gordon in Khartoum in 1884-85 were to constitute his last active command.

Five years as Adjutant-General, with H.R.H. the Duke of Cambridge as Commander-in-Chief, now followed. There is no need to accentuate the diversity of views held, expressed and practised by these two personalities. It is this part of Wolseley's life that is most fully—perhaps too much—elaborated by his biographers. Another five years in Ireland preceded the succession of Wolseley to the Duke's position. It thus fell to his lot to make the preparations for the war of 1899. In many ways Wolseley accomplished much in his great office, but there was still very much left undone when war broke out. He was already a tired man, exhausted with his struggles against lethargy and conservatism. Long years spent in detail work had not convinced Wolseley that it was possible to order and to expect things to be done merely by issuing an order or by writing a memorandum. He had to teach and to prepare, just as he had himself prepared the plan of campaign for the Red River, in Ashanti and in Egypt, down to the last item. He had found no properly trained subordinates to hand and so, throughout his service, had come to improvise his staff, the well-known "ring" or "gang," for whom he constantly called when campaigning was afoot: Buller, Wood, Colley, Brackenbury, Maurice among others. The names alone will now vindicate his choice. What else could he have done in an age when the Commander-in-Chief himself could write of the Staff College graduates as being "very ugly officers and very dirty officers," and also would neglect looking at their inspection schemes in order to regale himself on pork chops and other delicacies.

It has often been said that Wolseley was an egoist and ambitious. That there was ground for this accusation is perhaps true. In addition he was inclined to think much of his own reputation, as well as ready to cultivate the favour of Royalty. Yet this latter propensity did not once enter into his relations with the Duke of Cambridge. These faults, however, cannot dislodge Lord Wolseley from his pedestal. His views on Army reform, organisation and administration are still remarkably vigorous and fresh. Even the possible formation of a Ministry of Defence entered into his calculations. It is in this direction that the present biography deserves study by every soldier, sailor or civilian who aspires to any comprehension of the problem of British Defence, both in the abstract and concrete, as well as in all its minor and purely technical aspects.

This is a good and most interesting book, not too easily read owing to its somewhat excessive condensation, slightly disproportionate allotment of space to matter, and lastly to a somewhat humdrum though perfectly lucid style. It should find an honoured place in every military library.

The Campaign in Mesopotamia, 1914-1918. Compiled by BRIG.-GENERAL F. J. MOBERLY, C.B., C.S.I., D.S.O. Vol. II. H.M. Stationery Office. 1s. net.

This second volume of the official history of the Mesopotamian campaign covers the period from the decision to advance on Baghdad, after General Townshend's decisive victory at Kut-al-Amara, down to the failure of the last attempt to relieve Kut and the surrender of its beleaguered garrison.

It is a tale of tragedy, relieved only by the fruitless heroism of our troops. At its start the success of our arms was at its zenith, but thereafter we follow, almost as if plotted on a graph, the gradual decline of our prospects, and of the high if over-optimistic hopes entertained by the leaders, until the final picture is one of unrelieved gloom—the blackest hour before the dawn.

There is little attempt at literary embellishment, the volume is essentially a business-like account of events, with the data set out for the reader to draw his own conclusions, yet General Moberly has shown no small skill in marshalling and linking his facts and in developing them in logical sequence, so that a thread of continuity runs throughout the volume. In a military history of this nature it is so easy for the vital causes to be submerged under the mass of incidents, that the way in which he has kept in mind the requirements of the serious student of war, while avoiding the direct criticism that is neither permissible nor suitable in an official history, is a notable achievement. In preparing the maps, also, the common mistake of overloading them with detail has been avoided, though of course the featureless nature of the country lent itself to such clearness. One might suggest that some of the battle maps could be improved by showing in outline the movements of the principal columns and their positions at certain important periods.

Both for the student of military policy and for the student of tactics, the earlier chapters are the most interesting. The opening narrative of the way in which the decision to advance on Baghdad was reached throws the clearest light on the evils and difficulties inseparable from democratic control in war. Decisions were reached only after correspondence between "a multitude of counsellors," and in the course of this correspondence the import attached to a statement changed imperceptibly, with consequences that were unhappily far-reaching.

It is no exaggeration to say that "shades of meaning" led to "shades of Hell." *The lesson of unity of control had to be bought at a bitter cost.*

For the student of tactics the operations leading up to Ctesiphon and from there till the retreating force reached Kut are the most valuable part of the book, despite, or perhaps because of, the miscalculations and decisions taken on incorrect information which marred brilliant conceptions. While we are left with the feeling that practice did not altogether attain the standard of theory, that the Napoleonic ideal verged on being an obsession, and perhaps also that constancy of purpose was variable, there was at least an imagination and inspiration lacking in the later and even more fruitless operations of the attempt to relieve Kut.

It is clear from the narrative that of the four attempts, the second, on the right bank of the Tigris against the Ujaila Redoubt with the aim of turning the Es Sinn position, was the most promising of success. The story of how, when on the verge of triumph, with an immense superiority to the available enemy, the chance of surprise was lost makes melancholy reading.

But the tactics of this campaign are really less prominent than the problem of

supply and transport under exceptional difficulties, and with a river line of communications.

On this subject the volume affords a wealth of data for study and reflection, too complex for discussion here, but invaluable as a guide and a warning for future generations of soldiers.

The story of the attempts to relieve Kut and of its ultimate surrender forms one of the most moving pages in our history. Most terrible of all is the account of the treatment of our prisoners in Turkish hands. The one bright spot, and it deserves mention, was the intervention of sundry German officers and N.C.O.s on behalf of our men. "Of the British rank and file . . . more than 70 per cent. died in captivity or were never traced."

The Merchant Navy. (Official History of the War). Vol. II. By ARCHIBALD HURD. John Murray, London. 21s. net.

The first of these volumes dealt with the history of the Merchant Navy in the Great War during the cruiser period of the enemy's operations and up to the early months of 1915. The torpedoing of the "Lusitania," with the loss of nearly 1,200 lives, awakened the world to the full horrors of submarine warfare. Throughout the period covered by the present volume we see the continued struggles, after that event, between the diplomatic and the military elements in Germany; the one trying to keep peace with the United States, the other desperately anxious to achieve victory by bringing economic pressure to bear on the Allies when it was seen that the armies in the field were likely to achieve little more than "stalemate." So the pendulum swung, up to the eve of the declaration of "unrestricted submarine warfare," with which this part of Mr. Hurd's history closes. At one time Germany's diplomatic needs would predominate and submarine commanders were restricted to making attacks in waters where American interests were less likely to suffer, but ever and anon enthusiasm to damage the Allies at sea led to their taking more and more licence, knowing well that they had the fullest sympathy of their immediate superiors.

Midst all the dire perils which beset it, the Merchant Navy ploughed its way undaunted, and many a deed of heroism is recorded in these pages which will pass down to posterity much of the spirit of those who did so much to enable us to win through the most critical part of the whole war. Moreover, merchant officers and seamen came to swell the ranks of the Royal Navy, as they have been wont to do whenever our country has been in peril by sea. Amongst other useful services they formed the greater part of the crews of the indomitable 10th Cruiser Squadron, which, with its armed merchant ships, guarded the northern gateway into the Atlantic under conditions of exceptional difficulty and hardship.

No less inspiring is the history of the Auxiliary Patrol, which Lieut.-Commander Keble Chatterton, R.N.V.R., has assisted to compile. It was the drifters, trawlers, minesweepers and such-like auxiliary craft, manned largely by fishermen, which played so great a part in countering the submarine menace, and to these, too, the author pays a warm tribute.

A chapter is devoted to the case of S.S. "Brussels" and Captain Fryatt's execution, which again called forth neutral condemnation of German methods. Finally we get the histories of the sea raiders "Möwe," "Seedler" and "Wolf." There are numerous and striking photographic illustrations, which show something of what our merchant navy had to endure, and some useful maps.

Mr. Hurd writes in his well-known clear and unemotional style; but he leaves with the reader a sense of profound admiration for those whose story he has to tell.

Der Weltkrieg, 1914-1918. Vols. I and II. Mittler und Söhne, Berlin.

This, the first instalment of the German official contribution to the history of the World War, is contained in two large volumes of, between them, rather over 1,100 pages; it is announced as *bearbeitet im Reichsarchiv*, which, being interpreted, no doubt means "prepared by the General Staff," since it bears all signs of very careful preparation by experienced military writers; but since the first volume closes with events on the Western front on the 27th August, 1914, and the second volume—concerned with the Eastern theatre of war—with the battle of the Masurian Lakes, fought in the middle of September of the same year, it is evident that the German official history of the Great War must be an enormous work, extending to very many volumes and taking some years to complete. A glance at the bibliography shows that the authors or compilers of this work have depended almost entirely upon German sources of information; the list of German works consulted is very full and comprehensive; the toll taken of French books on the war is less so; while inspiration from English sources is drawn from four printed books only, one being the official account prepared in the Historical Section of the Committee of Imperial Defence, while the other three are Gooch's "History of Modern Europe," General Murray's "Fortnightly History of the War," and—Lord French's "1914"!

It is quite impossible in the space available to offer any detailed criticism of the battles as described from the German point of view; but it may be said that so far as these two volumes go the events with which they are connected are narrated with commendable restraint; there is no extravagant attempt at anything like undue glorification of the German initial successes; though possibly it may be considered that in regard to the battles of the frontier, and especially as to the fighting at Mons and still more at Le Cateau, there is no stress laid upon the very stout resistance which the Germans everywhere met with—we are rather left to imagine that this was easily swept aside, if indeed the Germans did not actually carry everything before them.

In the introductory chapters on the origin of the war and on the relative strength of the belligerent armies, there is nothing said which has not been said before. As to the origin of the war, every effort is made to show that Russia was wholly responsible for the war expanding beyond the limits within which it at first seemed possible to confine it; while in a comparison of strengths we are asked to observe the overpowering forces to which the Central Powers were opposed, but nothing is said as to the armies of the latter being all on the spot, within a ring-fence and immediately available, while those of the Western Powers had to be collected from long distances and in many cases from overseas.

These volumes are admirably produced and are particularly well provided with sketches in the text and maps in end-pockets.

Western Civilisation and the Far East. By STEPHEN KING-HALL. With three maps. Methuen & Co., Ltd. 18s.

The author of this book claims that we are now entering upon a period which will have as one of its distinguishing features the assumption by Asiatics of a position in world politics to which their numbers and the extent of their lands entitle them. His early chapters form a background and give a historical account of the development of China and Japan since the middle of the last century; the primary motive being to trace the influence of Western civilisation. The author shows that China's resistance to Western claims proved unsuccessful and, as resistance weakened, she

lost her dependencies; and that Japan made a successful attempt to escape the fate of China, and rapidly became almost more Western than the Westerners.

When he reaches the present state of this development, a keynote is touched. The assertion is made that "Westernism" is beginning to make its effect below the surface and is now in the process of changing the thoughts of these Far Eastern peoples. Material development, he points out, is visible and is bound to be more rapid than mental development. The theory that the East is "inscrutable and unchanging" is challenged, and the opinion maintained that no idea comprehensible to a European is inevitably incomprehensible to an Asiatic.

In Japan, the absorption of Western mentality that underlies Western materialism, is held to be responsible for the increasing power of the masses. The rice riots in 1918 are given as an illustration of this power. The suppression of "dangerous thoughts"—what we should call the voice of democracy—has become the subject of detailed legislation in Japan. Democratic tendencies, nevertheless, in the author's opinion, threaten to undermine the strongholds of the religious faith of the country, and it is from religious beliefs that the Japanese people have received the imperialistic aspirations that have elevated the nation to rank among the Great Powers of the world. Unless a revolutionary upheaval is averted, Japan, he says, must meet her downfall, which he visualises as "a pitiable spectacle of the wreck of an Eastern culture which had sacrificed its soul on the altars of Western materialism."

In China, similarly, education and the influences of the West are depicted as leading the younger generation—men of the so-called Student Movement—to the conviction that old Confucian teachings of morality are unnecessary superstitions. This "New Tide of Thought," the author considers, is likely to bring with it a spirit of national consciousness that has, so far, never existed in China. He is, however, exceptionally optimistic about the far-reaching effects of this movement, and it is difficult to believe that the students will not sacrifice, any less than other Chinese parties, their ideals for hard cash.

The advance of Western civilisation in the Far East is not the only aspect considered; the author sees that, in order to meet that progress, there is a necessity for Western Powers to readjust their foreign policy and adopt the broad "principles of international co-operation and service in the world for the world."

This book will no doubt be widely read. King-Hall is admirably courageous in expressing his opinions, which are founded on firm convictions and sound reasoning. He admits he is an idealist and in so doing forestalls the criticism he expects. It is felt that comments upon British political parties might well have been avoided and references made, without losing the force of the argument, to schools of thought or policies which are not invariably confined to one or any party. The insertion in the concluding remarks of the racial question as a new aspect of the main subject, may, conceivably, throw the reader off his balance and detract his attention from the real recapitulation. The book, nevertheless, stimulates an interest throughout and contains much food for reflection on a problem that not only concerns our foreign policy, but also must affect the foundations of our strategy.

The Naval History of the World War. Vol. I., 1914-15. By CAPTAIN THOMAS S. FROTHINGHAM, U.S.R. Harvard University Press and Humphrey Milford, London. 198s.

This is a concise and well-written Naval history of the first year of the war as seen from the American point of view. It has been compiled from data provided by the Historical Section of the United States Navy and presumably, therefore, may

be regarded as something in the nature of an Official History. It is not, however, comparable to our own much fuller Official History of Naval Operations.

Captain Frothingham deals with his subject more from the standpoint of analysing results and the causes from which they sprang rather than with the intention to record events in detail. He shows the failure of the German General Staff to understand the meaning of sea-power and their obsession for the "dry land plan of war." Against this he holds up to criticism the lack of training and Staff work on the British side. He is not always correct in his criticisms, however. For instance, he has been led into the statement that there was no real War Staff at the British Admiralty until the re-organisation in 1918, which is certainly not in accordance with fact. Had he emphasised the point that during the opening phases of the war the Naval Staff had not sufficiently emerged from the "one man show" tendency of many Flag Officers, he would have been nearer the mark.

In view of the defence which is so frequently raised, when our weak policy in the economic side of the war is being condemned, namely that increased pressure would have set America against us, it is interesting to find professional opinion in the United States criticising severely our failure to use sea-power more effectively from the first. Not only does the author emphasise our failure, but in a review of this history, published in the *Journal of the U.S. Naval Institute Proceedings* of November last, we find Rear Admiral Rodgers, U.S.N., writing: "Not until this country came into the war and insisted, was the British mastery of the sea fully exercised for the purpose of its creation: namely, the economic exhaustion of the enemy." As a sound doctrine of war, no one is likely to dispute this view, but it is open to question whether this criticism, coming from such a quarter, is entirely fair.

In discussing the battle of Coronel the author has gone badly astray in technical matters. This has led him to subscribe to the old fallacy that, had Admiral Cradock stuck to the antiquated *Canopus* all would have been well. He deals, at a length which it scarcely deserves, with Lord Fisher's still-born Baltic project and closes with a sound appreciation of the hopes and failures of the Dardanelles operations.

Some of the criticisms in this volume may not be very palatable on this side of the Atlantic, but they are at least interesting as showing how events in those pregnant months struck the onlooker and the book is obviously written with the genuine intention of culling the most important lessons for professional absorption and not with any desire to catch the popular fancy by blasting individual reputations. As such it is a useful addition to Service literature. Even more trenchant but all the more illuminating is Admiral Rodgers's review, already alluded to.

Air Power and War Rights. By J. M. SPAIGHT. Longmans, Green & Co. 25s.

The advent of air warfare has made obsolete many of the rules formerly set up to regulate the conduct of war between nations. At sea, for example, the right of search of neutral merchant shipping frequently could not be exercised by the crew of an aircraft; yet in practice it is unlikely that aircraft would permit the free passage of merchant shipping to an enemy country. The rules of warfare require overhauling and adapting to modern conditions, and Mr. Spaight, in his book "Air Power and War Rights," sets out to tackle this complex problem and to suggest a new code.

But, before the rules of warfare can be brought up to date, it is necessary to determine how far belligerent nations can be bound by rules. The 1914-18 illustration of the way in which the panic which precedes defeat drives a nation to

trample under foot the rules of warfare might seem to have been sufficiently vivid to leave a lasting impression. Yet already that lesson is being forgotten.

Mr. Spaight asks his readers to believe that the air may be made to exercise a humanitarian influence upon warfare. He suggests that the bombardment of towns could be confined between certain hours. Between those hours the towns could be evacuated of their civil populations. He claims that the economic pressure resulting from the destruction of property would be sufficiently heavy to give victory. Apart from the impracticability of such bloodless bombardments in the congested districts which surround nearly all factories, rail centres and storehouses, it is clear that a nation which ruthlessly bombed life and property would gain an immense and immediate superiority over the nation which bombed only property. If this seems to a belligerent to represent the whole difference between victory and defeat, can it be expected that such indiscriminate bombardment will not be employed?

It is far better to face the fact that the air will, in all probability, brutalise war in a manner but faintly conceivable. Unless one belligerent can send into the skies a force immeasurably superior to that of the other and can obtain an unquestioned superiority in the air, the sufferings of contestants, including the civil element, will be severe. Hope for civilisation need not be abandoned, however, on account of the appalling potentialities of air warfare; but it must be to the finer sensibilities of humanity rather than to written agreements between nations that idealists may yet dare to look for better things.

Mr. Spaight himself touches upon the same truth when he says: "The success or failure of the rule must depend upon the heart and conscience of the fighting *personnel* who will apply it."

Mr. Spaight's work is authoritative; he deals with a novel subject fully and with a commendable closeness of reasoning, but from the attitude of the legal mind rather than from that of the student of war.

Spun Yarn. (2 Vols.). By SIR HENRY F. WOODS, K.C.V.O. Hutchinson. 36s.

Either Sir Henry Woods is addicted to a diary or else he has an excellent memory. In these two volumes we have not merely a bare account of the events of a varied and interesting career, but, by means of little touches of detail, a live impression of the persons who entered the author's life. Scenic description, however, is not much in the author's line and, apparently knowing this, he leaves much to the reader's imagination.

The first volume describes Sir Henry's early life in the British Navy, then an affair of sail and auxiliary engines; Old Japan of the Feudal Age with its noble Daimios and Samurai swordsmen; and, later, Turkey. After his success in the difficult task of placing a light-ship off the entrance to the Bosphorus, Sir Henry was admitted into the Turkish Navy as an instructor.

The second volume deals with the author's experiences in the Imperial Ottoman Naval Service, wherein he finally rose to General of Brigade of the Sea Forces ("Bahrish Liva").

He was for some years A.D.C. to Sultan Abdul Hamid and saw many interesting personages and much political intrigue. During the Russo-Turkish War he was busy with mines and torpedoes. There are descriptions of "Selamliks" and "Bairams" (religious ceremonies), the abdications of two monarchs, and a diverting account of a bogus plot.

Sir Henry has two valuable qualities as an autobiographer: when anything worth recording happens, he is present; and his anecdotes are frequently full of humour.

These volumes will be found of interest to the general reader, if only for the light the author throws upon the absurd diplomatic blunders which forced a very friendly nation to become our enemy.

Sea Ways and Wangles. By NAUTICUS. (James Brown and Son, Glasgow.) 2s. 6d. net.

These little sketches of naval ranks from Cadet to Admiral are penned with the sure touch of one who knows his characters at first hand.

The little idiosyncrasies which go with the various types and seniorities are caught and portrayed; but, for the most part, not unkindly.

We see the naval Cadet, proud and self-conscious in the newly donned uniform, the Midshipman sailing serenely through his difficulties and shortcomings with the ever ready "Aye-Aye, Sir," the Sub-Lieutenant blossoming into his first frock coat, cocked hat and all the panoply of commissioned rank.

The author is, perhaps, most satirical at the expense of "The Gunnery Lieutenant"—the first of whose maxims, he suggests, should be "Never explain and never apologise." For once, he seems to be a trifle out of date and to be writing of an era when "Gas and gaiters made the man" and "Attitude was the art of gunnery," for the successful Gunnery Officer of to-day must be nothing if not human. However, one must not take these pen-portraits too literally. The "Torpedo-man," the "Navigator," the "P.M.O.," the "Pay," the "Chief," "Flags," the "Commander," and "the old Man"—all come in for their share of good humoured chaff.

The admirable pen-and-ink sketches which occupy the letter-press also owe their origin to a professional hand. That accompanying the final chapter combines to leave an impression of pathos in this outline of a naval career. A Cadet, replete with turn-down collar and white knife-lanyard, is seen in contemplative mood, building "castles in the air," midst which stands an Admiral in all the glory of full dress—the dream of a young life. The chapter touches on the power and authority wielded by the Flag Officer during his brief spell of great authority, but, be it marked, likewise heavy responsibility. And then comes the end, the end of dreams, the end of ambitions!

"When eventually your time is up, and, shorn of your staff, you finally haul down your flag for the last time and retire into the obscurity of some modest villa in a seaside town, which is all that your retired pay will enable you to run to, you will be able to reflect ruefully, as you potter round the local golf links or stroll by the sea, on the greatness that was once yours."

But the author might perhaps have ended on a different note. The Navy needs young men; it takes heavy toll of their energies and enthusiasms, and there is very limited room at the top even for those who have served it best. Wherefore many of its most devoted servants, by retiring, have performed a last unselfish act "for the good of the Service," by clearing the path for those younger men.

We are told by the author not to take him seriously, but underlying the humour and trifling exaggerations, which make this little volume very readable, is the strain of reality which reminds us yet again that "many a true word is spoken in jest."

Janes's Fighting Ships, 1924. Sampson, Low, Marston & Co., Ltd.

The new edition of this admirable publication is well up to the usual high standard of excellence. Of particular interest are some details of the new 10,000 ton cruisers about to be built by all the principal Sea Powers. Fairly full particulars and sketches of the French and Italian designs and a few figures relating to the Japanese ones are given. Only the names of the new British cruisers appear and the United States' ships are only briefly referred to in the foreword.

A number of new and good photographs have been added and views of some of the more important warships taken from the air are also given. Having regard to the growing importance of identification from aircraft it is to be hoped that these will be added to in succeeding editions.

An old feature which has been partly revived is the inclusion of plans and details of the principal United States and Japanese harbours and particulars of their docks and shipbuilding resources. It will make for completeness if those of the other principal countries could be included in future.

As a comprehensive record and pictorial guide to the navies of the world "Janes's Fighting Ships" easily holds its premier place.

REGIMENTAL HISTORIES.**The Connaught Rangers.** By LIEUT.-COLONEL H. F. N. JOURDAIN, C.M.G., and EDWARD FRASER. Volume I. The Royal United Service Institution.

There is a particularly warm welcome awaiting the histories of those distinguished Irish regiments which were disbanded after the Great War. This massive volume, published for the Institution, contains over 600 pages and does ample justice to the memory of the old 88th.

The material for the work, we are told, was collected systematically over a term of years. The authors have made good use of it. Raised in 1793, at the time of the French Revolutionary War, a detachment of the regiment was present at the ill-fated attack on Buenos Aires in 1807, but the Rangers had their first great opportunity in the Peninsular War. The record of the regiment in Portugal, Spain and France, from 1809 to 1814, is one of great distinction, as the list of battle honours shows; an excellent account of these momentous years is given; so also with the Crimean War and the Indian Mutiny. The smaller campaigns and peace time incidents at home and foreign stations are all invested with a very real interest. The Rangers took part in the operations for the relief of Ladysmith, but the later phases of the South African War provided, as for most corps engaged, a succession of monotonous experiences which are apt to be dull in the recital.

At the beginning of the Great War the 88th moved with the Lahore Division from India to France, and consequently saw heavy and almost continuous fighting on the Western front until the end of 1915. Then the Indian Corps was transferred to Mesopotamia, and the Rangers saw strenuous service in the attempts to relieve Kut and until the fall of Baghdad. Next they arrived in Palestine in time to participate in Allenby's operations which achieved final victory over the Turks. The tale of these crowded years is well told, although there is none too much space for the recital. The final chapter describes the disbandment.

There is a profusion of excellent illustrations and many good battle plans. The appendices, however, are not so happily contrived.

The History of the Prince of Wales's Leinster Regiment (Royal Canadians). Compiled and Edited by LIEUT.-COLONEL F. E. WHITTON, C.M.G. 2 Vols. Gale and Polden, Ltd., Aldershot. 25s.

Here is the record of the career of another departed Irish regiment. These two volumes possess a peculiar attraction, for Colonel Whitton writes particularly well when describing the life of his regiment in garrison and camp, no matter how uneventful the daily round may have been. Thus, the reader's interest is not confined to descriptions of the Royal Canadians in action, and even a casual perusal will light upon few pages that he might desire to pass over.

The first part of the work is concerned with the Regular and Militia battalions up to the year 1914, and many pages are devoted to those corps from which the 100th and 109th claim descent. The story of the 1st Battalion really starts as late as 1858, when it was raised in Canada, and the recollections of Mr. Henry Gorman do much to assist in justifying the editor's use of the quotation "I would have history familiar rather than heroic."

The 109th had a longer continuous existence than the 100th. Originally the 3rd Bombay Europeans, it was formed in time to take a share in the suppression of the Indian Mutiny, but, apart from a short campaign while stationed at Aden, saw no more active service until the concluding stages of the South African War. But there is plenty of personal recollection—including Colonel Whitton's own—which is used to present an accurate and interesting picture of the life of the 2nd Battalion.

The second volume, which records the services of the whole regiment during the Great War, and the subsequent disbandment, is quite appropriately the bigger of the two. The Leinsters were represented in nearly all the main theatres of war. The 2nd Battalion was with the 6th Division in France and Flanders; the 1st had experience of the Western front and of Macedonia and Palestine also; the 6th were at Gallipoli, in Macedonia and Palestine; and the 7th went to France at the end of 1915 and did splendid service until absorbed by the 2nd Battalion early in 1918. In many instances the heroic merges with the familiar, as it was bound to do.

Among his acknowledgements of assistance received Colonel Whitton mentions the pages of the R.U.S.I. JOURNAL. The appearance of the volumes reflects great credit on the publishers; there are many excellent illustrations; and the index and some of the maps are outstandingly good.

The 1st and 2nd Battalions the Sherwood Foresters in the Great War.

Compiled by COLONEL H. C. WYLLY, C.B. Gale and Polden. 12s. 6d.

All who are interested in this distinguished regiment will value this handsome record which has been as carefully prepared as it is beautifully produced. One or other of the regular battalions—and sometimes both—was present at most of the greater battles fought upon the Western front, and each was engaged in a host of minor actions which it has every reason to remember with pride.

Colonel Wyllly describes the career of the 1st Battalion in a continuous narrative before turning his attention to the 2nd, a method which has much to commend it. He enlivens the material obtained from official sources with extracts from the private letters of officers, and reproduces in full all congratulatory messages—and these are many—received from the commanders of higher formations. A very careful record of casualties is kept, and a list of officers serving with the unit is given at intervals. Each chapter is headed with an appropriate battle honour and in the appendices are found a complete list of these honours; personal honours

and rewards; an account, with illustration, of the opening of the Memorial Tower erected at Crich, Derbyshire, in honour of the fallen; and a list of the names upon the regimental memorial in the chapel of the Royal Military College.

The Colonel of the Regiment, General Sir Horace Smith-Dorrien, whose portrait provides a notable frontispiece, contributes a characteristic "Foreword" in which he expresses his appreciation of the book and his thanks to the author, also an old Sherwood Forester.

There is a wealth of illustrations, map, and battle plans.

The Fifty-Second (Lowland) Division, 1914-18. By LIEUT.-COLONEL R. THOMPSON, M.C. Maclehose, Jackson and Co., Glasgow. 10s. 6d.

This book ranks high among the divisional histories of the Great War. The Lowlanders fought on the Gallipoli Peninsula, in Egypt and Palestine, before moving to France in ample time for the "advance to victory," so that theirs is a varied career well worth recording. Colonel Thompson has obviously spared no pains to enlist the co-operation of all who had anything of value to contribute, so that he has been able to quote very largely from personal experiences. Despite his modest disclaimer one can hardly wish for anything better than this succession of vivid pictures of the Division in action, while the conditions under which it fought on three different battle-fronts are remarkably well described.

There is always some temptation for a divisional historian to overconcentrate upon the activities of the infantry. Colonel Thompson is not open to this reproach. Engineers, R.A.M.C. and Artillery are never crowded out of the canvas, and their good work is often recorded in detail, notably that of the sappers at the crossing of the Auja river. It has obviously been difficult to give a continuous story of the gunners, for only the howitzer batteries landed on the Peninsula, and when the Division embarked for France its artillery was left in Palestine.

The translation of "Allenby" into "El-Nebi," the Prophet, is rather audacious. Moreover it is news to hear that the selection of the battalions for disbandment was left to the Divisional commander when the reduction of infantry brigades was carried out in France.

The maps have been carefully prepared, but some are reproduced upon too small a scale to be easy of reference; the illustrations are of great interest, plentiful, and excellently reproduced.

Pipers and Pipe Music in a Highland Regiment. By MAJOR I. H. MACKAY SCOBIE, F.S.A., Scots. Dingwall: The Ross-shire Printing and Publishing Co. 8s. 6d.

Well illustrated, well annotated, and full of facts of regimental interest, the author has produced a volume which will appeal not only to the old 72nd, but to all interested in matters connected with military history. This record of a regiment's piping will be invaluable as a book of reference in the future.

The following have also been added to the library:

A SHORT HISTORY OF THE DUKE OF CORNWALL'S LIGHT INFANTRY. By LIEUT. H. N. NEWBY. Illustrations. 8vo. Gale and Polden, Aldershot. (Presented by the Officer Commanding 1st Battalion Duke of Cornwall's Light Infantry.)

THE 62ND WEST RIDING DIVISION, 1914-1919. By E. WYRALL. Vol. I. 8vo. J. Lane, Bodley Head, Ltd. London, 1924. (Presented by the Author.)

HISTORY OF THE GUARDS DIVISION IN THE GREAT WAR, 1915-1918. By LIEUT.-COLONEL C. HEADLAM, D.S.O. 2 vols. 1l. 10s. 8vo. London, 1924.

NOTICES OF BOOKS.

Memoirs of the late General Sir George Greaves, G.C.B., &c. John Murray. 15s.

These memoirs of a soldier who served his country during the last half of the 19th century will interest those who know India as well as New Zealand. During his early years, before he took seriously to his soldier duties, Sir George spent several summers in Cashmir, and has many stories to tell of his sporting experiences in out-of-the-way parts. After the Indian Mutiny he went to New Zealand with his regiment, where he was engaged on the staff during the Maori War. He speaks highly of the Maori as a fighter, and cannot but be pleased that the differences between them and the British settlers have been set at rest.

Returning to England, he served for some years at the War Office, being closely associated with the Duke of Cambridge, then Commander-in-Chief, and Lord Wolseley. Subsequently he held the positions of Adjutant-General in India, the Meerut divisional command, and ended up his military career as Commander-in-chief of the Bombay army.

Bannockburn. By JOHN E. MORRIS. Cambridge University. 5s.

Although the interest of this book is mainly archaeological, those portions dealing with the tactics of the early fourteenth century are of distinct historical interest. It is, moreover, a book which might find a place in the library of every Scottish regiment.

The English Conquest of Normandy, 1416-1424. By RICHARD AGER NEWHALL. Oxford University Press. 18s. 6d.

The author deals with the strategy of the English in Normandy after the battle of Agincourt. That policy is in some ways strangely reminiscent of the South African problem of 1900-02. The book, however, is so detailed as to be of value to the student alone.

Outline History of the Russo-Japanese War, 1904, up to the Battle of Liao-Yang. By "P. W." Sefton, Praed and Co. 4s. 6d.

Quite a good "cram" book. It is a compendium of the views of the best works dealing with the campaign, compressed into sixty pages and followed by some forty pages of answers to questions. Though an admirable guide it will not enable a student to pass any promotion or qualifying examination without further reading. Read in conjunction with a more complete narrative, it will be much to the benefit of the student.

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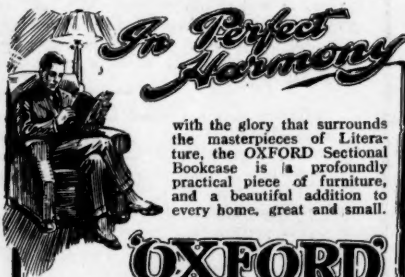
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